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ABSTRACT

This guide to cost management for institutions of higher education presents a methodology based on reducing "support services costs" (services that maintain rather than directly contribute to teaching, research or community service) thereby achieving the fiscal goal while maintaining the institution's mission. Chapter I describes the scope of and reasons for escalating costs at universities, explains current practices designed to contain costs, the limitations of these practices, and offers an alternative approach based on analytical techniques developed in the private sector. Chapter 2 summarizes the alternative concept of cost management offered in the previous section. Chapter 3 describes the process by which a university can assess the cost of its support services, with the goals of identifying opportunities to improve service delivery and reduce costs. Also included are case studies of projects undertaken for institutions of higher education. The tools and techniques for systematic and detailed analysis of cost management are described in detail along with an explanation of purpose and method of application in the final section. Appendix A lists those individuals consulted for the guide; Appendix B contains detailed summaries of five case studies. Numerous tables appear throughout. (JB)

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GUIDE TO COST MANAGEMENT FOR HIGHER EDUCATION

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U. S. DEPARTMENT OF EDUCATION

GUIDE TO COST MANAGEMENT
FOR HIGHER EDUCTION

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INTRODUCTION

INTRODUCTION

This guide is written for leaders in higher education who, recognizing the need for cost containment, are seeking systematic and analytical approaches to it. The concept of a guide to cost management for higher education arose initially from experience in restructuring organization and identifing opportunities for reducing costs in the business would. Although there are significant institutional differences between business and academia, the methods used to contain costs are sufficiently similar that the approaches taken for the private sector are directly applicable to universities. In this time of rising costs, the need for responsible, systematic cost management in universities is a particularly topicical issue.

This guide presents a methodology for cost management that also includes practical examples (presented as case studies in the text and appendixes) from studies undertaken for university and private-sector clients. The method has a proven track record in enabling universities to systematically control costs, promote achievement of the institution's overall mission, and allocate scarce resources strategically to the basic goals of teaching, research, and community service.

The focus of this guide is on "support services costs;" that is, the costs of services that maintain rather than directly contribute to teaching, research, or community service. The objective of the cost management methodology is to identify opportunities to reduce the costs of these support services with minimal reduction of the services themselves. Support services were selected as the focus because they lend themselves to cost management techniques and because when cost savings are made, resources can be redirected to the university's basic goals.

I - COST MANAGEMENT: CONTEXT AND RATIONALE

I - COST MANAGEMENT: CONTEXT AND RATIONALE

This chapter highlights the need for and approaches to cost containment in higher education.1/ It briefly describes the scope of and reasons for escalating costs at universities, and explains current practices designed to contain costs and the limitations of these practices. The chapter concludes by offering an alternative approach to cost containment, based on analytical techniques developed in the private sector, and founded on the premise that in institutions of higher education as in other organizations, most costs are manageable and can be contained without jeopardizing key services.

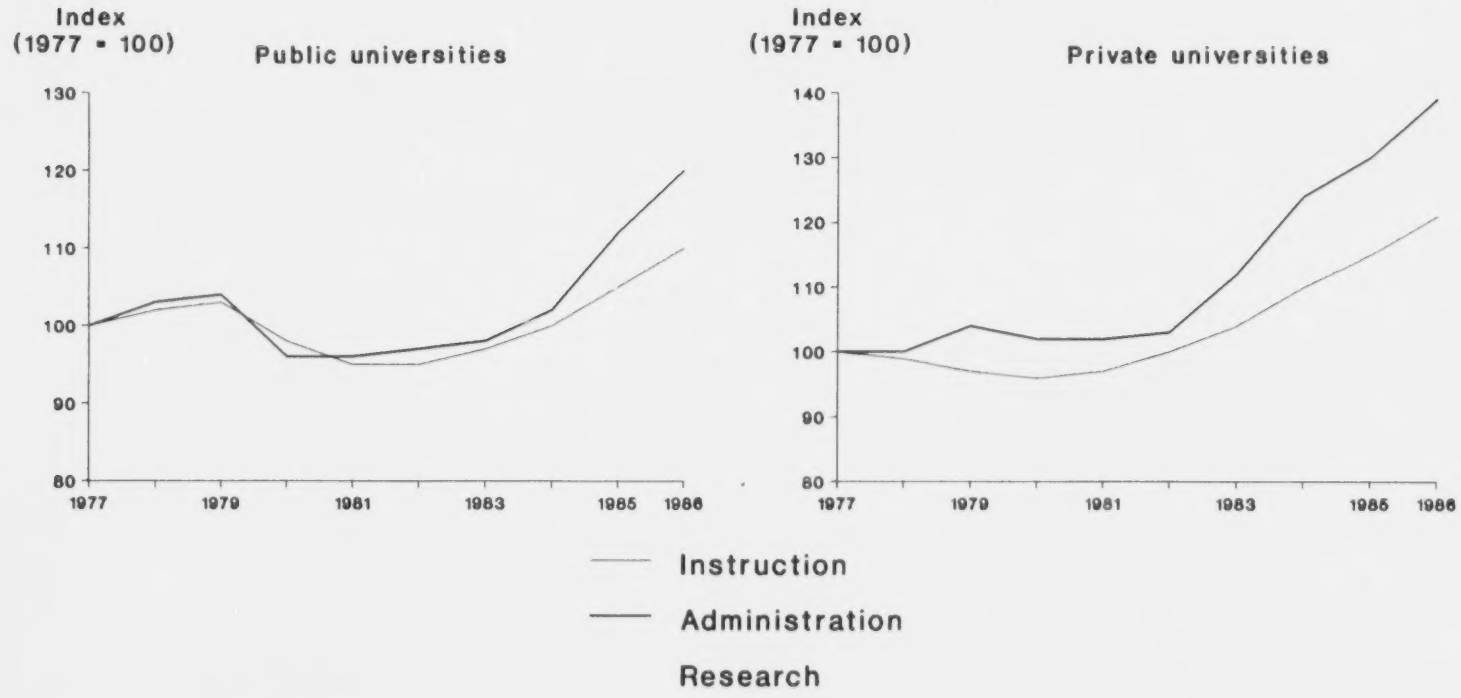
THE NEED FOR COST CONTAINMENT

During recent years, universities have been experiencing escalating costs. Expenditures for research, administration, and instruction have spiraled upward at both public and private institutions since the early 1980s. (See Exhibit I-1.)

Escalating costs have necessitated higher charges to students to obtain needed revenue. Between 1977-78 and 1987-88, costs borne by undergraduates rose by 113 percent at public

COSTS OF HIGHER EDUCATION HAVE INCREASED SIGNIFICANTLY IN THE PAST DECADE

Index of selected expenditures per full-time-equivalent student at public and private universities: academic years ending 1977-1986



SOURCE: National Center for Education Statistics, 1988

EXHIBIT I-1

institutions and 152 percent at private institutions, surpassing the 85 percent increase in the Consumer Price Index for the same ten-year period.2/

By the 1987-88 academic year, the average cost of one year's tuition, room, and board for an undergraduate was $4,030 at public institutions and $10,480 at private institutions.3/ And the increase continues. For the 1988-89 academic year, the average college student confronted a 7 percent hike in college tuition and fees over the previous year.4/

As the figures presented in Exhibit I-1 indicate, costs have been escalating most rapidly in categories not directly related to instruction. One of these categories, administration (expenditures for institutional support and academic support) is treated in this report. Between 1980-81 and 1985-86, administrative expenditures per full-time-equivalent student increased 17 percent at public universities, compared to a 6 percent increase for instructional costs per student. At private universities during the same period, administrative costs per FTE student increased 24 percent, compared to a 14 percent hike in instructional costs.5/

Experts cite a number reasons for the increases in college costs. (Appendix A lists the experts consulted for this guide.) First, economic pressures are forcing administrators to catch up with the inflation of the 1970s, which caused prices to rise faster than salaries. Faculty salaries must be made more competitive and facilities and equipment must be upgraded to compensate for maintenance deferred in the 1970s.

Second, cutbacks in public funding have shifted more of the financial burden onto students and their parents. These cutbacks include declining federal dollars for student financial assistance and research, as well as reductions, often unanticipated, in university appropriations from state governments that are experiencing tax revenue shortfalls. Reductions in state appropriations have particularly affected public institutions, which obtain more than 58 percent of their revenue from state and local funds.6/

Third, in response to loss of traditional revenue sources, potential decline in enrollment, and increased costs, universities have built up their development and marketing staff in an effort to secure additional contributions and to attract and retain students. This strategy has met with some success, despite dire predictions for the size of the college-age population.

Fourth, compliance with state and federal affirmative action and safety regulations also affects costs. Many universities have hired additional staff to recruit minority faculty members and students, as well as to monitor university compliance with affirmative action requirements. Campuses have been renovated to make them accessible to handicapped students. Moreover, universities must respond to OSHA, EEO, financial aid, and hazardous waste disposal requirements.

Fifth, universities have thus far lacked incentives for reducing costs. When confronted with increased costs, the initial university response has been to enhance revenues rather than cut back. The reluctance to reduce costs stems from the beliefs that it is difficult to define or measure productivity in an academic setting, and that cost reduction may impair the quality of services. In addition, highly selective (and prestigious) private institutions operate in a market that values quality and easily tolerates tuition increases. This situation makes the need for cost reduction less compelling.7/

Sixth, as enrollment declines, the imperative to increase quality and become more competitive with other institutions has led to the introduction of enhanced services and facilities. Examples are counseling, career placement, and sports facilities.

Seventh, improvements in technology have created the requirement for significant expansion in the use of computers, with the accompanying increase in cost.

CURRENT PRACTICES TO CONTAIN COSTS IN HIGHER EDUCATION

Until fairly recently, universities have undertaken few systematic efforts to contain costs. Perhaps for this reason, the literature on cost containment in higher education is relatively limited. This literature, plus the testimony of other experts, reveals that in the absence of a systematic approach, current practices have taken two forms, both of which severely limit achieving the goal of cost containment.

First, practices to hold down costs have tended to be relatively narrow in scope. They focus on specifics, such as reducing energy costs, improving the use of technology and management information systems, upgrading purchasing procedures, or modernizing facilities and equipment. They typically focus on a particular organizational unit or function rather than encompassing a number of areas.

Second, cost reduction efforts of a larger magnitude have tended to be crisis-driven or implemented in response to an immediate revenue shortfall. These efforts are usually

precipitated by unanticipated or external conditions, such as declining enrollment and state budget cuts. The immediate response is to survive the crisis through inflicting the least amount of hardship by distributing it among the greatest number. As a consequence, minimal, short-term cuts are often implemented across the board.

If the crisis continues, subsequent cuts tend to be imposed on noninstructional budgets or on those unencumbered by constraints imposed contractually or by tenure. For example, institutions often divest themselves of optional expenditures, for such items as travel or temporary employees. They may defer maintenance and equipment purchases. Or they may place employees on short-term contracts and impose a hiring freeze.

The value of these methods is limited because they are generally not tied to the institution's mission or priorities, lack a comprehensive organizational focus, and/or are essentially quick-fix measures, undertaken without long-term planning. They reflect the perception that cost containment is a necessary evil to be tolerated rather than an opportunity to positively influence the university's mission.

There are six specific cost-cutting methods that reflect the practices described above and are frequently applied by senior

officials at universities as well as in the public and private sectors. Although these methods are popular, they all have a number of deficiencies that make their application limited in value.

Make Across-the-board Cuts

Uniform reductions are intended to minimize the impact of cutbacks by equitably distributing them. However, such an approach frequently results in unplanned or unnecessary loss of services. Consequently, initiatives that may initially be perceived as fair actually penalize efficient programs along with the inefficient, as well as the individuals they serve.

Impose A Hiring Freeze

Because a hiring freeze avoids layoffs, it is often viewed as a painless way to institute cuts. However, it may inhibit the overriding goal of focusing on institutional priorities. This happens because the university loses a measure of control when vacated positions cannot be filled. Moreover, in a hiring freeze, some nonessential positions are retained simply because incumbents elect to stay.

Allow Units To Reduce Their Budgets By A Targeted Amount

Unit managers, if allowed to specify areas for reductions, may intentionally select their most popular programs. The motive for this tactic is creation of a lobbying base among their clients, which can be exploited to restore the lost funds. If the lobbying succeeds, reductions may be displaced to areas that are providing more essential, albeit less popular services.

Discontinue Or Curtail Services

Eliminating services may appear to be a relatively easy way to reduce costs. It is not a painless way, however, for it can shortchange students or faculty if cutbacks become a substitute for instituting efficiencies.

Initiate Long-term Productivity Programs Or Studies

Productivity programs may begin with strong claims calculated to motivate employees to work harder and increase output. The enthusiasm initially generated is gradually dissipated, however. Such programs usually involve creation of in-house task forces to devise systems for measuring output or increasing motivation. These systems are often difficult and time-

consuming to implement. Since they also tend to be applied in peripheral functional areas, they make minimal impact on the budget.

Delay Or Trim Capital Expenditures

Refusing to address infrastructure needs at best defers and at worst exacerbates fiscal problems, but does not resolve them. By failing to adequately maintain working conditions, this tactic can also escalate operating costs and impede employee productivity.

THE POTENTIAL FOR CHANGE

Despite the relative lack of a systematic approach to cost containment in higher education to date, there appears to be growing interest in the subject on the part of universities. That interest is expressed in several ways.

First, all but the most selective private universities are finding it increasingly difficult to maintain and increase their revenues to fully support their objectives. Tuition increases are affecting students' decisions on which institution to attend. The result has been a dramatic shift in the number of students attending less expensive public rather than private universities over the past several decades, or beginning their

academic careers at two-year and commuting institutions. Development officers, who are having problems meeting fund-raising targets, have embarked on aggressive efforts to enhance revenue.8/ Since many public institutions have received only modest increases in federal and state revenues, pressures have grown to increase tuition and fund-raising.

Second, business leaders and state policymakers, concerned with economic development and the need for a trained work force, are focusing on university quality. These leaders expect universities to foster economic development through research, development, and training, and are calling for initiatives that have significant cost implications. Lawmakers in 36 states have introduced proposals to improve the quality of undergraduate programs. These programs would require that universities obtain funds either through increasing revenue or reducing costs.9/

Third, there is growing acceptance of the notion that costs can and should be contained in a university environment. This thinking emerged in a recent survey of the executive officers of state higher education governing boards and commissions. The findings revealed great concern over costs, along with the acknowledgement that certain university functions were subject to cost reduction and/or improved productivity.10/

Accompanying the interest in cost containment is a strong skepticism about whether costs can be reduced in a university setting, or indeed whether it is advisable to do so. This skepticism is expressed in various ways:

- There is no consensus among experts over the prevalence of wasted expenditures.

- Many experts believe the pressure to reduce costs is primarily politically motivated.

- Some see growth in the number of administrative positions as a healthy response to the changing nature of education and research technology; they view this growth not as reflecting inefficiencies, but as representing new support systems for learning.

- They are concerned that cost containment will result in fewer services rather than more efficient service delivery.

- Some view the number of institutions of higher education as the cause of inefficiency.

- Some believe whatever savings are possible have already been made.

Although there is some truth to these perceptions, they serve also to highlight the fact that if cost management is to become a reality, it must be undertaken systematically and through a rigorous analytical process that provides a strong foundation for the changes that must be made.

A DISTINCTIVE APPROACH TO COST MANAGEMENT

It is the premise of this guide that most costs are manageable and can be substantially reduced without jeopardizing services. The concept of manageability presented here is borrowed from the private sector, where experience has overwhelmingly proven the soundness of the premise.

It is inappropriate to suggest wholesale application of private-sector management concepts in an academic setting. The unique mission of colleges and universities precludes this. Moreover, these institutions do not share the same imperative for profitability that characterizes the private sector. Nevertheless, the evidence makes a compelling argument for greater attention to efficiency and to containing the costs of support services. The risks of failure to do so can be summarized as follows:

- For competitive reasons, if costs continue to escalate, universities will likely lose market share to cost-conscious institutions; private universities will continue to lose market share to subsidized public universities.

- For resource reasons, the appropriators/endowers/tuition payers, who are demanding greater cost-consciousness of all other institutions, will make the same demands of universities; the risk is real that if performance does not improve, policymakers will modify university governance, operation, and funding rules. As a consequence, universities may lose a measure of their much-valued autonomy.

Cost-cutting is a sensitive issue in many institutions. Universities are similar to banks and many other service-oriented enterprises in that they are labor-intensive and must provide such support functions as personnel, budget, and maintenance, among others. There is no way to reduce costs in a labor-intensive operation without eliminating positions and to some extent reducing the size of the work force. Cost-cutting is therefore inevitably painful in the short term. There are, however, a number of conditions that if met can assist in achieving success in cost management efforts. The efforts must be:

- Guided within the context of a sound, well-reasoned strategy

- Introduced in an environment in which there is strong executive leadership and firm resolve backed by or formally endorsed by the board of trustees

- Based on hard data, rational choices, and accompanied by careful, thorough explanations to key constituencies.

The cost management methodology and series of related analytical techniques developed primarily in the private sector have been used successfully in universities and other not-for-profit organizations to assist senior officials in reducing costs. The following chapters present the methodology and the analytical tools to apply it. Appendix B contains case studies that illustrate how these methods have been applied to universities.

NOTES

1. Throughout this report the terms "higher education" and "university" refer to universities, colleges, and two-year colleges, both public and private.

2. National Center for Education Statistics, Digest of Education Statistics 1988, (Washington, D.C.: U.S. Department of Education), p. 136.

3. Ibid., p. 136.

4. The College Board, News release (August 5, 1988).

5. National Center for Education Statistics, Digest of Education Statistics 1988, pp. 136-137.

6. National Center for Education Statistics, Postsecondary Education, Volume 2 (Washington, D.C.: U.S. Department of Education, 1988), p. 41.

7. See, for example, National Association of College and University Business Officers and the U.S. Steel Foundation, A Decade of Cost Saving Ideas, 1976-1985 (Washington, D.C.); and Winners of The Cost Reduction Incentive Awards (Washington, D.C.) (1986, 1987, and 1988 editions).

8. Chronicle of Higher Education, August 3, 1988, p. A27.

9. National Governors' Association, The Governors' 1991 Report on Education (Washington, D.C.: NGA, 1988), p. 39.

10. Paul Brinkman, The Cost of Providing Higher Education: A Conceptual Overview (Denver, Colorado: State Higher Education Executive Officers, June 1988).

II - SUMMARY CONCEPT OF COST MANAGEMENT

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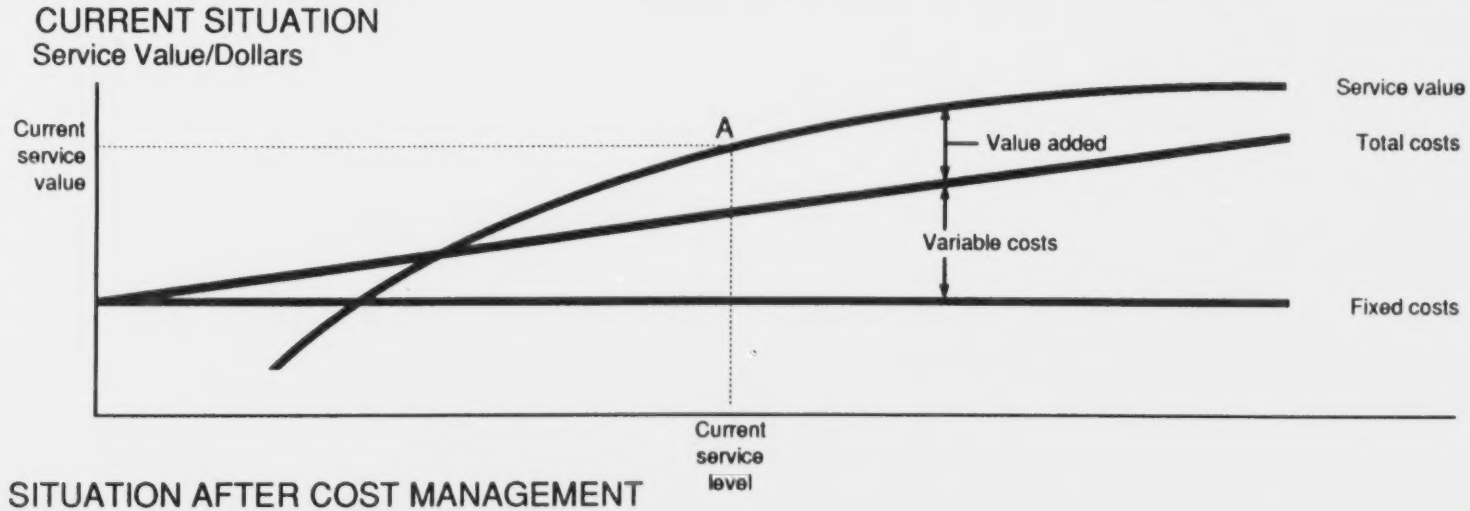
This chapter presents the essential concepts on which cost management is based. It describes the objectives of a cost management study, the organizational basis of the overall concept, the fundamental characteristics of the cost management approach, and the key management actions required to support the process of determining cost reduction opportunities. Brief descriptions of the basic cost management process and of the analytical tools that can be used are presented next, followed by the types of recommendations that can result from the study. The methodology and the analytical tools derived from the cost management concepts are elaborated in detail in Chapters III and IV, respectively.

OBJECTIVES

The objective of any cost management study is to identify opportunities a university (or other organization) can pursue to improve delivery of services (or goods) while minimizing costs. Exhibit II-1, which depicts the relationship of service quality (or revenue) to cost performance, shows how cost management can change that relationship. In summary, cost management changes

Cost management changes the relationship between service and cost



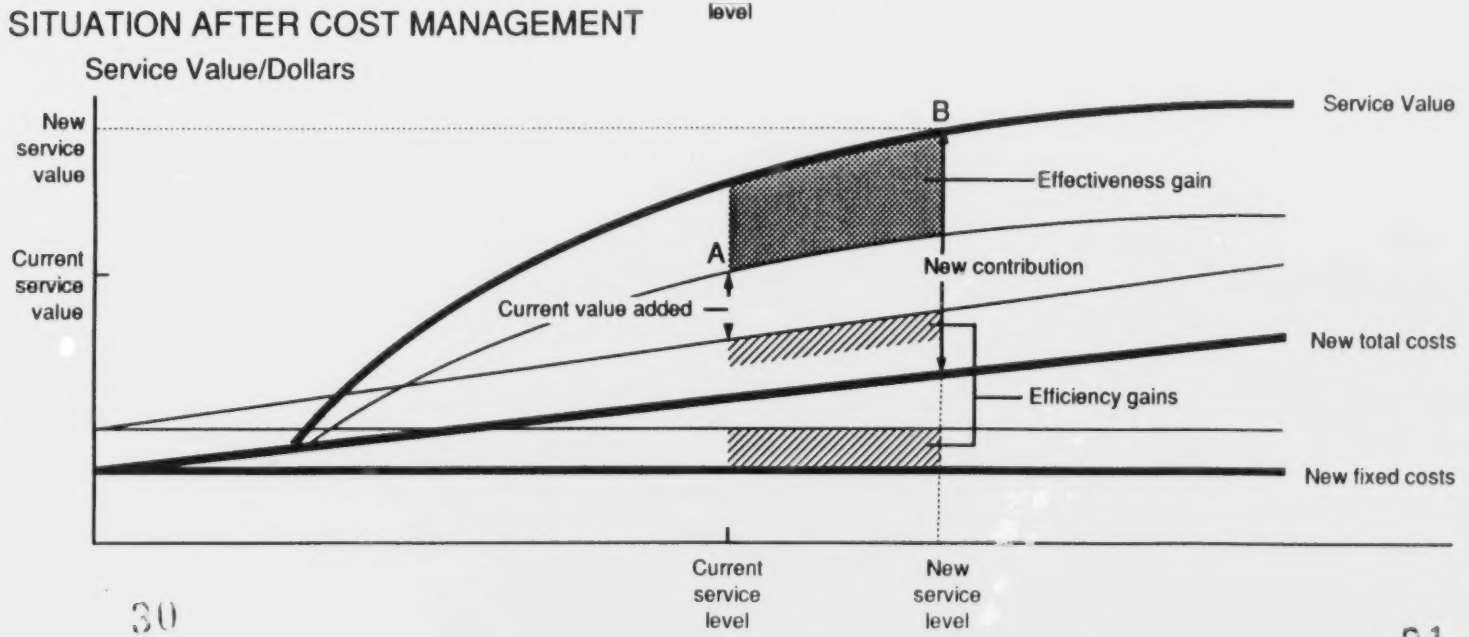


EXHIBIT III-1

the relationship when improvements in efficiency reduce fixed or variable costs, or when improvements in effectiveness increase the quality or level of services or enhance revenues.

Obviously, there is always a strategic trade-off between improving service quality and reducing costs. (Some of the ways these trade-offs can be made are illustrated in Exhibit II-2.) For example, if a university wishes to increase the availability or quality of certain services, it may need to improve the efficiency with which services are provided, but in order to make the improvements without extra costs, it may have to eliminate unnecessary work.

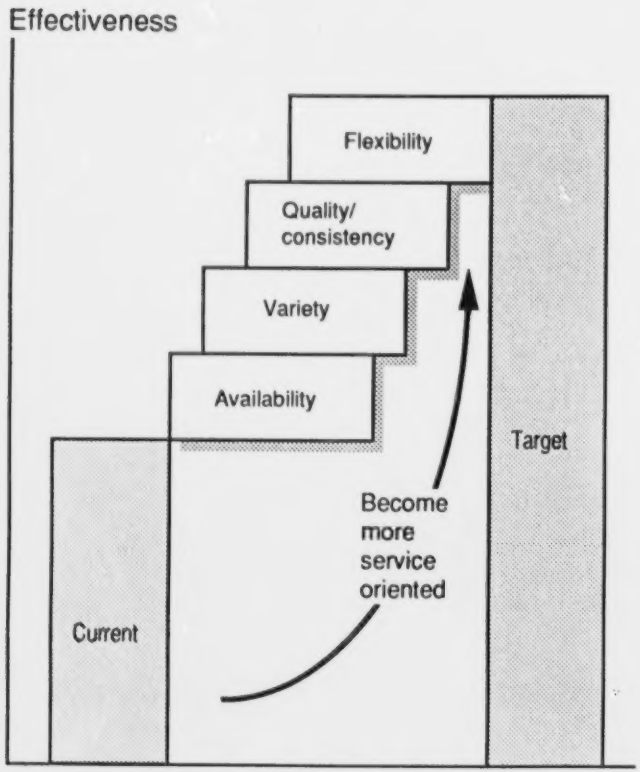
ORGANIZATIONAL BASIS

The concept of cost management as developed and used in this report is based on a fairly simple organizational model. The premise of this model is that organizations exist to achieve intended results. While this may seem obvious, it is nevertheless true that many universities and other organizations fail to focus on results on a day-to-day basis. Some employees assume the organization they work for exists to serve them and their needs rather than to fulfill its purposes. This assumption may reflect normal human thinking, but it obscures the fundamental purpose of the organization.

The cost management study can bring about increases in effectiveness and decreases in costs

THE GOAL

More effectively satisfy the needs of the university at the lowest practical cost



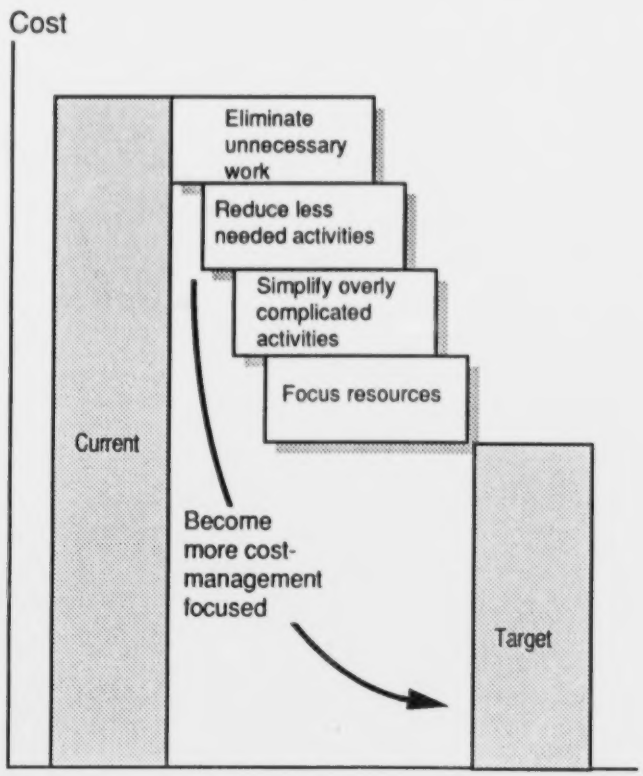


EXHIBIT II-2

The model of organizational planning (Exhibit II-3) depicts results as a product of three other broadly defined factors: strategy, work, and organization. The elements of the model as they apply to universities are as follows:

- Strategy. Strategy addresses the mission of the university and the nature of its environment. It comprises a set of long-range principles, goals, and plans that reflect for now and into the future the constituencies the institution seeks to serve; the kinds of services it wishes to offer; how well it wants to provide these services; and the way it intends to balance the demands of such constituent groups as students, alumni, employees, the community, and public officials.

- Work. Work consists of the tasks, functions, and processes that employees perform. Examples of work performed at a university include teaching, research, counseling, budgeting, accounting, typing, filing, groundskeeping, and mechanical repair.

- Organization. Organization encompasses the way work is structured, staffed, and performed. It is reflected in job responsibilities, reporting relationships, staffing levels, and the way individual roles and responsibilities are integrated into group efforts. Organization is also

The organizational planning model links strategy, work, organization, and results

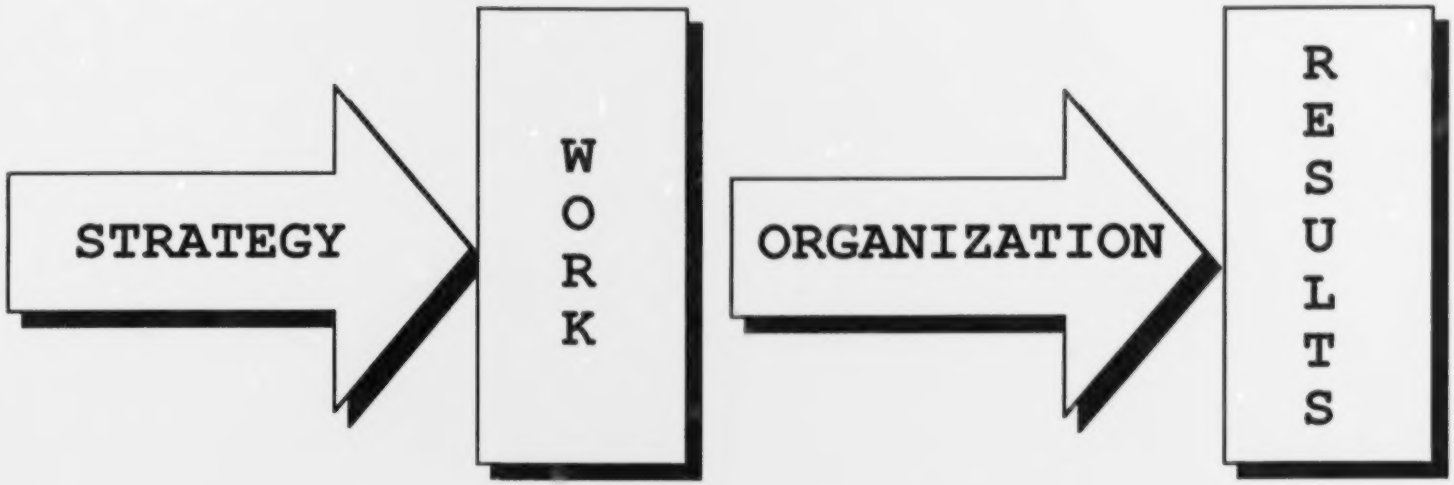


EXHIBIT II-3

reflected in the institution's culture or shared sense of values and attitudes, and in resource allocation, which involves setting priorities among various functions and tasks.

- Results. Results are the fundamental goals of the university. The most basic ones are difficult to measure: educating students to become creative and productive members of society, producing advances in technology that improve the quality of life, setting an example for social advancement, and supporting the various academic disciplines as a means to promote the pursuit of knowledge. Intermediate results measurable on a day-to-day basis may serve as rough proxies of long-range goals: numbers of graduates, retention rates, admissions rates and yields, papers published, research grants obtained and funds spent, and affirmative action records.

Use of the model can enable a university to see the way long-term strategy determines the specific tasks to be performed. Work, in turn, must be structured in a way that produces the desired results.

CHARACTERISTICS OF THE COST MANAGEMENT APPROACH

The approach to managing costs encompasses five basic characteristics:

- Holistic. The scope of an analysis includes all university departments and functions not directly related to teaching and research. This comprehensive approach ensures that all potential sources of savings are probed, that each nonacademic department is subject to a uniform standard of scrutiny, and that the interrelationships among functions and departments are understood and properly analyzed.

- Long-term. There are two ways in which the approach to cost management can be considered long-term. First, the cost management study is conducted in the context of the university's long-range planning and financial goals, which form the basis for a more focused and productive institution for years to come. Second, the study should represent a stage in the university's long-term efforts to understand its problems, build a consensus for addressing them, and forge an implementation plan to solve them.

  A long-term approach will require initial preparation through analysis, goal-setting, and consensus building,

and will also necessitate an implementation period in which to phase in the recommended changes and other management improvements.

- Strategic. The approach to cost management should be guided by the university's overall status and strategic plan. By first clarifying and understanding the goals of the university in terms of the constituencies it seeks to serve, the programs it wishes to emphasize, and the way it will relate to its constituents (and its competition), the analysis of costs can be conducted with an informed sense of the university's priorities. In effect, the approach translates strategic goals into concrete proposals for structural and operating changes.

- Focused On People And Their Work. Using the university's service goals and priorities as the basis, the cost management analysis focuses on the work required in each service area and the number of people needed to perform it efficiently. Because salary and benefits typically comprise a large percentage of a university's support services cost, reducing costs in a university usually means reducing the payroll.

- Focused On Cost/Benefit Trade-offs. The approach addresses the issue of appropriate levels of service in organizational units. The principle of diminishing marginal returns dictates that at some point additional service levels yield marginal results that do not justify the expense of the additions. Levels of service are evaluated to determine whether they justify the costs.

LEADERSHIP SUPPORT

Although the approach to cost management is adaptable to the academic environment, there are a number of distinctive features of universities that make the application more complex than in the private sector:

- Goals are more broadly defined and constituencies much more broadly based than in business.

- Decision-making tends to be highly decentralized.

- Tenure and other labor agreements curtail management flexibility.

- Since faculty are highly specialized, they are not interchangeable.

These features call for strong presidential leadership and board support if success is to be achieved.

The features make universities well designed to promote academic inquiry and to provide a variety of services to the community, but they also make universities difficult places in which to effect comprehensive change. Given the distinctiveness of the university setting and its peculiar difficulties, top management must first take at least four steps to build momentum for change:

- Top Management Commitment. The president of the university must be the prime mover behind the effort to achieve cost reduction. The initial step is winning the support of the board of trustees and of the vice presidents who serve as the cabinet in laying the groundwork for a thorough cost control study and implementation program. The board may even be prompted to "direct" the president to undertake the study. The president should lead senior management in a public advocacy campaign for the proposed study.

- Building A Rationale And Consensus. Senior management should develop its own financial analysis to use as the basis for publicizing the need for a comprehensive effort at controlling costs and setting resource allocation priorities. A sense of urgency must be communicated to the university community in order that it will appreciate the need for change. A sense of opportunity must be communicated for reallocating resources to serve strategic purposes. A balance in representing urgency and opportunity is essential.

- Setting Goals. On the basis of its own financial analysis, senior management should set a target goal for cost savings that will maintain financial stability while supporting priority programs. The target serves only to set the tone of future discussions. Not how many dollars the university can save, but in what specific ways the savings will be achieved and how they will be used become the important considerations.

- Ensuring Objective Analysis. Although many university staff members may have the requisite skills to perform this type of analysis, there is no certainty that they will be objective. An analysis involving issues of cost savings can become politically charged. It is the responsibility of senior management, therefore, to ensure objectivity and university employees' appreciation of the need for it.

BASIC COST MANAGEMENT PROCESS

There are two basic objectives in any cost management process in the model described above:

- Determine the university's work requirements, including both an understanding of what work must be done and of the external environment that helps determine what work must be done.

- Redesign the organization to conform to these work requirements. All elements of the organization - structure, culture, processes, and allocation of resources (including staff) - must be considered candidates for redesign.

These two objectives can be accomplished through a series of tasks that define the cost management process. The process presented in this guide (and shown in Exhibit II-4) has a proven track record in studies conducted for a variety of organizations. It consists of six basic tasks: project definition and planning, fact-finding, analysis, recommendations development, implementation planning, and implementation. Ongoing communication is also part of the process. A detailed presentation of the cost management process is contained in Chapter III.

TOOLS

A number of tools and techniques have been developed specifically for use in the cost management process. They are used in the fact-finding and analysis stages of the cost

A cost management study consists of seven basic components

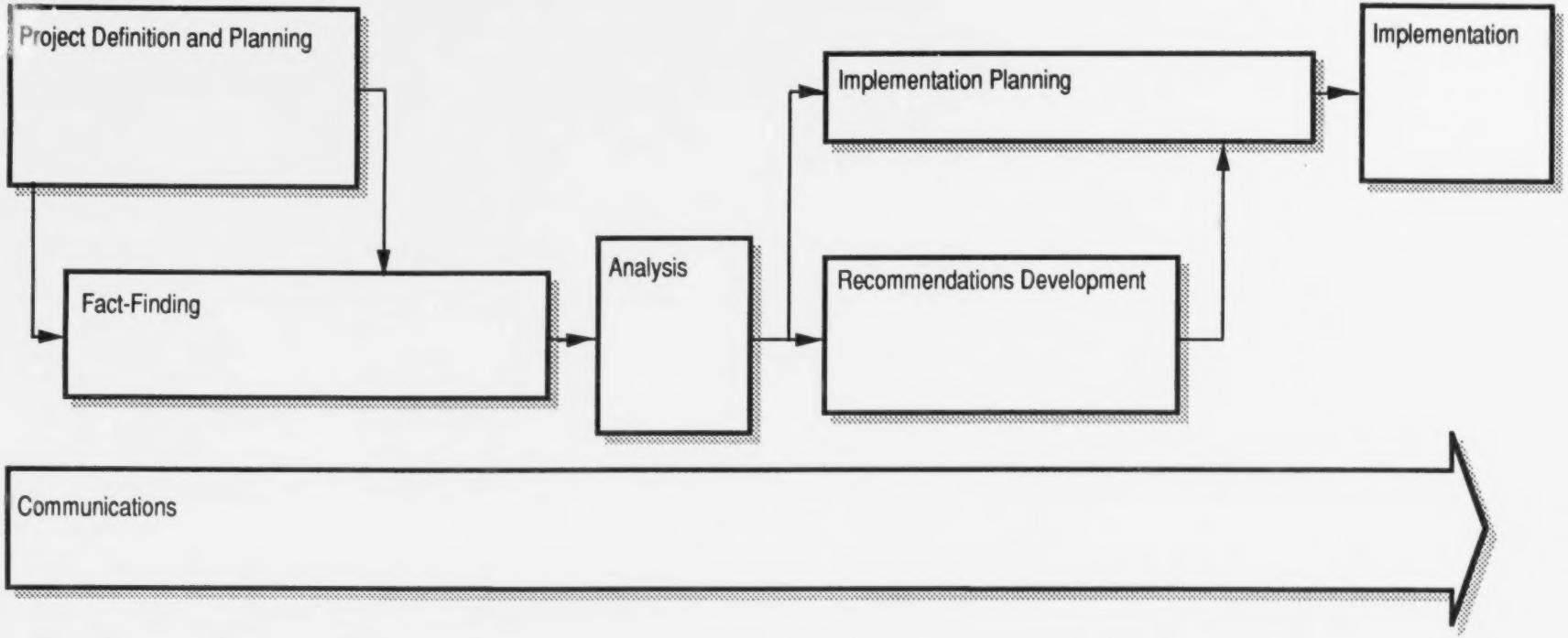


EXHIBIT II-4

management study to obtain and organize information about a university or other organization. Chapter IV presents detailed explanations of 12 analytical tools and other techniques commonly used in cost management studies.

RESULTS

The end product of a cost management study is a series of recommendations to improve services and reduce costs. At minimum, eight broad categories of recommendations may be developed:

- Restructuring. Creating new organizational structures, positions, reporting relationships, and roles and responsibilities in order to focus on achieving priority results

- Focusing Services. Assigning priorities among services and service levels

- Identifying Alternative Funding. Seeking alternative sources of revenue that will allow the funds under review to be used in a different way

- Streamlining Processes. Simplifying work processes to ensure that only important tasks are accomplished and that they are performed with minimal steps and the most efficient use of staff time

- Consolidating Service Delivery. Placing together similar services currently offered by various units

- Eliminating Duplication And Overlap. Eliminating services and programs that duplicate others, while maintaining the same overall level of service

- Removing Excessive Management Layers. Eliminating unnecessary middle management positions to ensure that fewer staff supervise and more produce

- Improve Productivity. Producing more with fewer staff, through such means as better scheduling, supervision, automation, and workload balancing.

III - THE COST ASSESSMENT PROCESS

III - THE COST ASSESSMENT PROCESS

This chapter describes the process by which a university can assess the cost of its support services, with the goals of identifying opportunities to improve service delivery and reduce costs. The process is based on the concept of cost management presented in Chapter II. The chapter also contains case studies of projects undertaken for institutions of higher education. For each case, a specific task in the cost management process is highlighted in detail.

OVERVIEW

A cost management study is conducted with the major goals of a university in mind: teaching, research, and community service. The cost management process involves identifying the work that best supports the university's strategic direction in accomplishing those goals, and redesigning the organization to perform that work effectively and efficiently.

The process is carried out in six sequential tasks and through ongoing examination of a seventh area. These tasks are

project definition and planning, fact-finding, analysis, recommendations development, implementation planning, and implementation. Communication is ongoing throughout the process. These seven elements are described in detail in this chapter.

PROJECT DEFINITION AND PLANNING

This task, the responsibility of the president and his or her designees, is carried out in eight interrelated steps (illustrated in Exhibit III-1).

Define Objectives, Scope, And Known Issues

In the initial planning, the president and his immediate top-level staff should identify:

- The intended outcomes of the study (areas for improvement, targeted savings amount)
- The problems that gave rise to the study
- The issues to be addressed
- The organizational units to be studied
- The level of effort and amount of time required to conduct the study

The initial task of a cost management study involves defining the project and preparing a plan to accomplish it

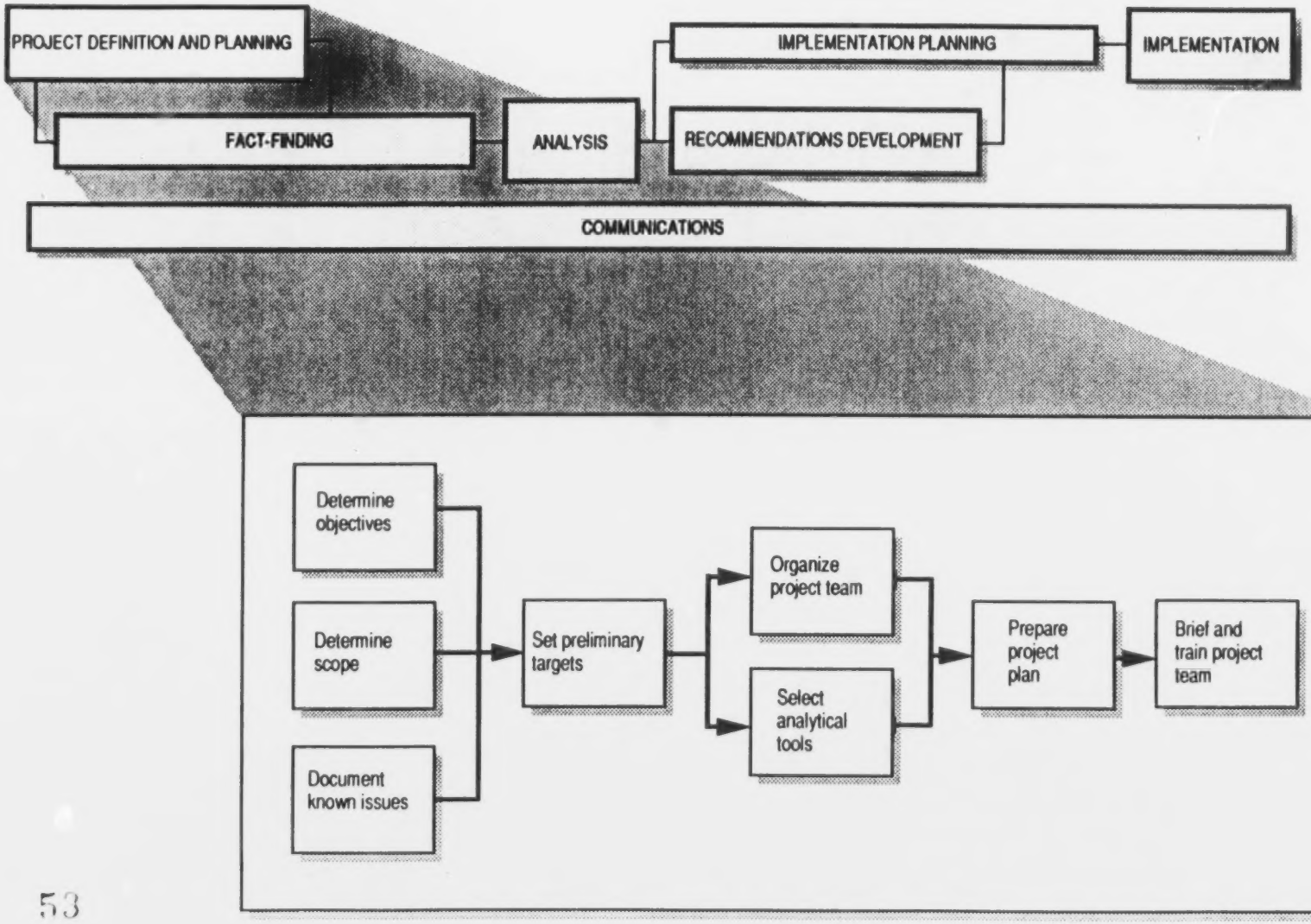


EXHIBIT III-1

- The strategy to be used in accomplishing the study (the staff who will be assigned, the amount of effort to be invested, the outside assistance that may be required, and the projected cost).

The success of the project will depend to a great extent on the definition of the scope. It should include a statement of intended outcomes and costs. It should be sufficiently broad and the level of effort invested sufficiently great to cover all major support service areas and their interrelationship.

Set Preliminary Targets

Targets should be set on the basis of perceived deficiencies in current operations. They can be set in response to the question, "What will enable the university to function more effectively and efficiently?" The targets should therefore encompass all that is necessary to make the university fiscally sound and competitive. They may be expressed in a variety of units (e.g., dollar savings, number of staff reductions), but should be measurable, quantitative goals.

Targets may be specific to each department or operating unit, or may be general, encompassing the entire university. Potential savings will differ from department to department.

Targets must be set realistically and allocated equally throughout departments and units. Failure to do so may jeopardize the study's credibility. During the fact-finding tasks, preliminary targets will reviewed and adjusted.

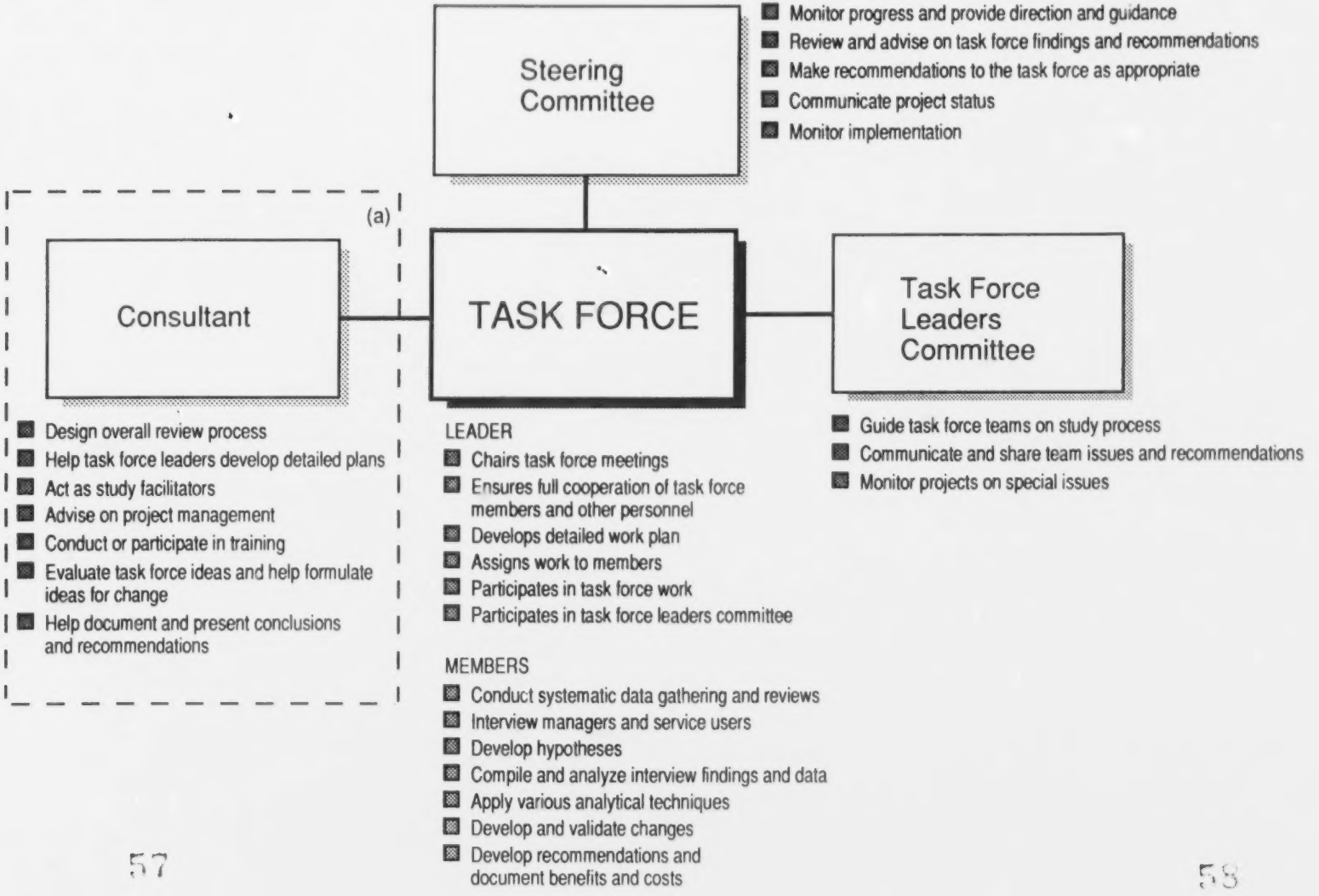
Organize Project Team

One of the critical decisions in the early stages of the study involves the makeup of the project team. The possible role of outside consultants is part of this decision. Project team organizers should select team members who will enhance the strength, objectivity, and credibility of the results.

A typical project team structure, along with the roles of its various elements, is shown in Exhibit III-2. The structure includes a task force of individuals freed on a full- or part-time basis from their regular responsibilities. It also includes a steering committee or executive committee (most likely consisting of the president and the cabinet), whose role is to guide the task force.

Consultants may be retained as part of the study team. A typical role for outside consultants on a joint consultant-client team is depicted in Exhibit III-2. Alternatively, the nature of the project may require that consultants assume full task force responsibility.

A typical project team structure consists of several elements, each of which plays a distinctive role


Steering Committee
Monitor progress and provide direction and guidance
Review and advise on task force findings and recommendations
Make recommendations to the task force as appropriate
Communicate project status
Monitor implementation
(a)
Consultant
Design overall review process
Help task force leaders develop detailed plans
Act as study facilitators
Advise on project management
Conduct or participate in training
Evaluate task force ideas and help formulate ideas for change
Help document and present conclusions and recommendations
TASK FORCE
LEADER
Chairs task force meetings
Ensures full cooperation of task force members and other personnel
Develops detailed work plan
Assigns work to members
Participates in task force work
Participates in task force leaders committee
MEMBERS
Conduct systematic data gathering and reviews
Interview managers and service users
Develop hypotheses
Compile and analyze interview findings and data
Apply various analytical techniques
Develop and validate changes
Develop recommendations and document benefits and costs
Task Force Leaders Committee
Guide task force teams on study process
Communicate and share team issues and recommendations
Monitor projects on special issues

(a) Possible role of outside consultant

EXHIBIT III-2

Any task force arrangement has both advantages and disadvantages. For example, consultants will bring to the study the objectivity of the outside observer. However, certain requirements are essential for effectiveness in any team: sufficient time for thorough analysis, and assignment of personnel that will ensure objectivity.

Select Analytical Tools

There are at least 12 analytical tools (Exhibit III-3) that can be used in various stages of the cost management study process. Each tool's applicability will be dictated by such criteria as study priorities and constraints (Exhibit III-4):

- The degree to which the study focuses on operational productivity improvement
- The extent of resources available for the study
- The deadline for study completion
- The organizational aspect(s) to be analyzed.

The 12 analytical tools are presented in detail in Chapter IV.

A variety of tools can be applied in the cost management process

TOOL		OBJECTIVE	DESCRIPTION
BROAD APPLICATION	Activity analysis	Optimize allocation of human resources to activities	Determines the way individuals allocate time among activities
	Joint team forms review	Achieve broad-based client commitment to cost reduction actions through fully participatory approach	Obtains data and suggestions on cost reduction from managers
	Service users' survey	Assess importance, quality, and quantity of services provided	Solicits users' opinions through a survey of services offered
APPLICATION TO ORGANIZATION	Decision/ responsibility matrix analysis	Align decision-making and assignment of responsibility within the organization	Illustrates responsibilities by individual/organization
	Mission and role analysis	Evaluate effectiveness of a function or unit	Determines whether activities of a function or unit match its targeted purpose in contributing to university objectives
	Spans and levels analysis	Improve organizational design	Analyzes university organization chart to identify positions with sub-optimal number of reports

EXHIBIT III-3
Page 1 of 2

A variety of tools can be applied in the cost management process

TOOL		OBJECTIVE	DESCRIPTION
APPLICATIONS TO OPERATIONS/ PRODUCTIVITY IMPROVEMENT	Process analysis	Improve methods and procedures	Analyzes process steps, flows, work volumes, schedules
	Productivity measurement	Ensure that productivity levels are accurately monitored and maintained	Develops measurement system, units of measure, productivity ratios, data collection mechanism, goals, and reporting systems
	Workload balancing or demand scheduling	Determine staffing required to meet fluctuating work volume	Determines work volumes and mix on which to base appropriate staff schedules
OTHER APPLICATIONS	Cost/benefit analysis	Match investments in services and activities with benefits obtained	Compares activity costs and service levels with benefits
	Make/buy analysis	Determine whether a product or service is best procured internally or externally	Identifies candidate products and services; develops costs and qualitative factors
	Alternatives Analysis	Determine which of several alternative recommendations will be most effective and efficient	Identifies alternatives and criteria with which to judge them; uses criteria to select best alternative

EXHIBIT III-3
Page 2 of 2

Analytical tools should be chosen on the basis of selected criteria

Analytical Tools

Criterion	Activity analysis	Joint team forms review	Service users survey	Decision/ responsibility matrix analysis	Mission and role analysis	Spans and levels analysis	Comparative efficiency analysis	Process analysis	Productivity measurement	Workload balancing	Cost/ benefit analysis	Make/ buy analysis
Objectives												
Administrative/overhead reduction	●	●	●	●	●	●	◒	●	◒	○	●	◒
Operational productivity improvement	◒	○	○	○	○	◒	●	●	●	●	◒	●
Budget												
Ample	●	●	●	●	●	●	●	●	●	●	●	●
Adequate	○	○	◒	●	●	●	●	◒	◒	◒	◒	◒
Tight	○	○	○	●	◒	●	◒	○	○	○	○	○
Time frame												
Normal	◒	◒	●	●	●	●	●	●	●	●	●	●
Compressed	○	○	○	◒	◒	●	○	○	○	○	○	○
Analytical priority												
Structure	◒	○	○	◒	●	●	○	○	○	○	○	○
Culture	○	○	◒	○	◒	○	○	○	○	○	○	○
Processes	○	○	○	●	○	○	○	●	○	○	○	○
Resources	●	●	●	○	○	●	●	○	●	●	●	●

Fit between tool and situation: ● Good ◒ Adequate ○ Poor

EXHIBIT III-4

Prepare Project Plan

The project team should prepare a "project plan" that presents the study objectives, scope, approach, roles and responsibilities, and schedule as defined by the president and his or her top staff. The plan should allow for periodic review by the steering committee.

Brief Project Team

Once the project team is appointed, it should be thoroughly briefed by the steering committee on the objectives, scope, issues, and targets of the study.

In preparing the project plan and briefing the project team, several caveats should be kept in mind. If cost studies fail or falter, they do so for a number of reasons:

- Lack of full commitment and involvement by top management and line management
- Inappropriate study goals, set without internal consultation and without considering the environment, including the competition
- Short-term orientation

- Use of across-the-board approaches; failure to recognize differential needs/impacts by department or unit
- Implementation pace too rapid
- Single-purpose focus; lack of broad, encompassing scope
- Focus on no-risk improvements
- No apparent benefits to employees
- Excessive complexity of study process or recommendations
- Poor communication with employees.

These items can serve as a checklist in briefing the project team and preparing the project plan.

* * * * *

At "Midwest State," thoroughness in the initial definition and planning task helped the university community recognize the need for change and promoted acceptance of the specific study goals.

"MIDWEST STATE"

"Midwest State" wished to conduct a comprehensive cost management study of all nonacademic areas. (Appendix B contains a more detailed description of the project). The study was conducted in two phases: a reconnaissance phase and a detailed study phase. In the first phase each unit was examined from a top-management perspective. This phase served as the basis for focusing consultants' resources in preparation for the more detailed second phase. It also served as the basis for targeting potential cost savings.

Study Preparation. In preparing for the study, the president and his cabinet presented a rationale and created a consensus among senior management on the need for a comprehensive effort to control cost. In an effort to instill recognition of the need for change, a sense of urgency was communicated to the university community. The cabinet was involved in extensive discussions to define the study scope and approach and to select the consultants who would conduct the study.

Target Goal. Senior management set a specific goal of $9 million in annual savings. That figure was selected to permit support for priority programs and provide flexibility in reallocating resources, while maintaining financial stability. Once the target was set, questions centered not on whether the university could reduce costs, but how. In order to create the opportunity to choose among alternative cost reduction opportunities, the university raised the target goal for the consultants to $11 million.

Process Review. A series of checkpoints was established for periodic review at various points during the study. The aim was to ensure effective communication between consultants and the cabinet. These reviews provided the consultants with information useful to their analysis, and ensured that the university not only participated in developing the final recommendations but also understood them and was committed to implementing them.

Preliminary Reconnaissance. In a study of this magnitude, a preliminary reconnaissance can serve as preparation for undertaking the larger study. The reconnaissance phase presented the opportunity to form hypotheses on the potential for improvements and on reducing costs within each unit, and it helped set priorities for the amount of

time needed to conduct the detailed cost analysis. During this phase, potential duplication or overlapping responsibilities throughout the various units was identified. And conducting a reconnaissance provided the cabinet with a preliminary analysis of findings to which they could offer valuable input and guidance.

FACT-FINDING

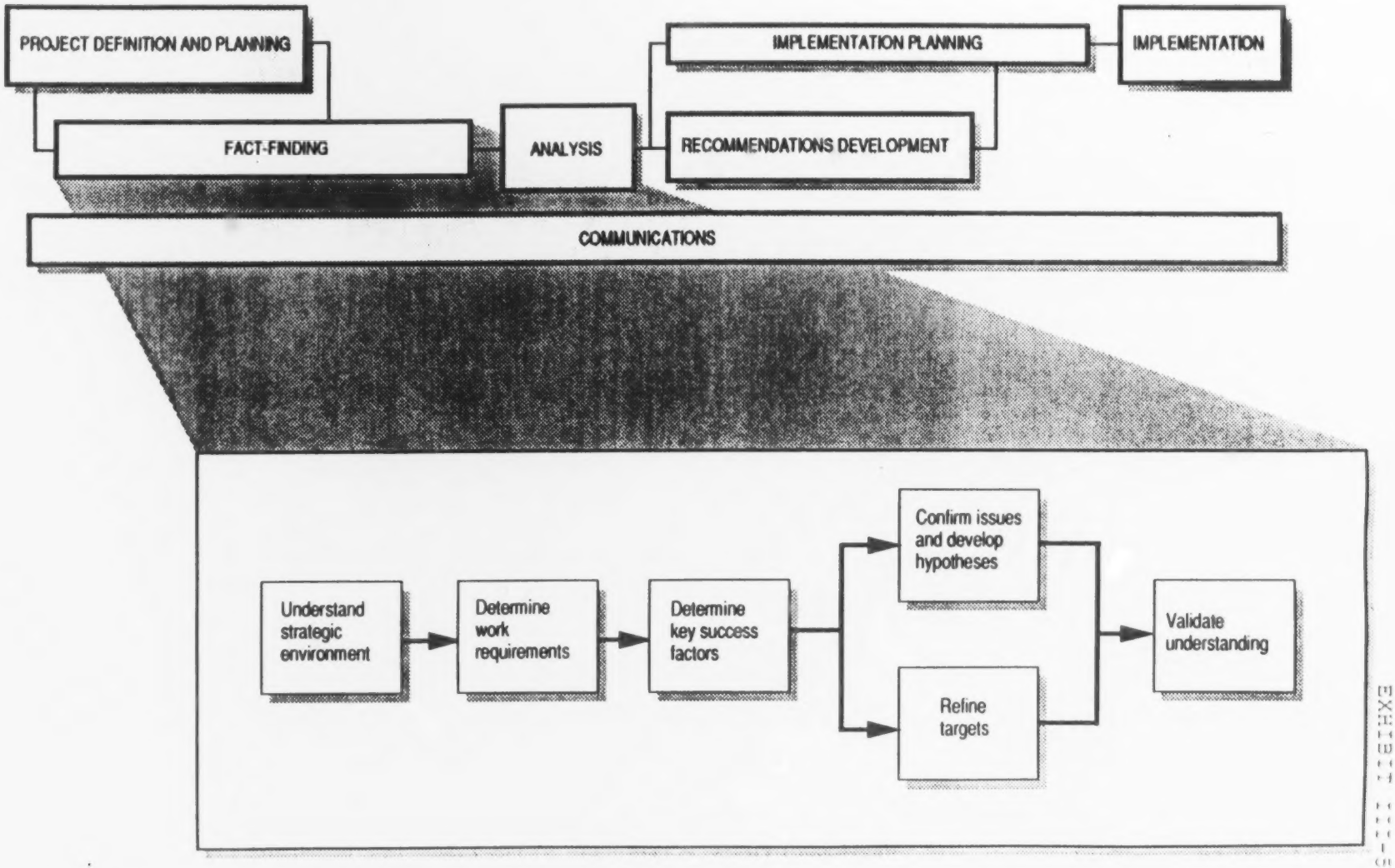
During this task, information about the work of the university is gathered, organized, and prioritized. The goals are understanding the way the work is organized and recognizing deficiencies that may suggest improvements. The six steps of this task (presented in Exhibit III-5) are described in the paragraphs that follow.

Fact-finding depends initially on document review, interviews, and surveys. Collection, organization, charting, display, and initial analysis of this information may rely on a number of analytical tools. Exhibit III-6 lists these tools and evaluates their usefulness in the fact-finding task.

Understand The Strategic Environment

A successful cost management study must assess the relative appropriateness of various opportunities to reduce costs and the competing possibilities for use of scarce resources. One

The essential activity in fact-finding is determining the university's work requirements



Tools used in fact-finding

PROJECT TASK	Activity analysis	Joint team forms review	Service users survey	Decision/ responsibility matrix analysis	Mission and role analysis	Spans and levels analysis	Process analysis	Productivity measurement	Workload balancing	Cost/ benefit analysis	Make/ buy analysis	Alternatives analysis
Fact-finding	●	●	●		●			●		●		

● Best time to use tool

EXHIBIT III-6

criterion for assessing these opportunities is their fit with the strategic direction of the university and its competitive environment. Only with the perspective gained by understanding the university's strategy can the project team adequately assess current activities and expenditures.

The purpose of this step is to identify and articulate the elements of strategy that will be useful in assessing alternative cost reductions or alternative uses of resources. It is accomplished through collection and review of information from relevant internal and external documents, interviews, and surveys. Various analytical tools, such as alternatives analysis and mission/role analysis (described in Chapter IV), are particularly useful in this step.

Determine Work Requirements

Work requirements are all the activities that must be performed by the university to fulfill the basic goals of teaching, research, and community service. They also include the support services necessary to ensure effective delivery. All work requirements must directly or indirectly add value to these basic services; an activity that does not meet this criterion is not a work requirement. Determination of university work requirements is the essential activity in

fact-finding and the core activity on which the overall cost analysis is based. Some of the data sources useful in determining work requirements are presented in Exhibit III-7.

In the organizational planning model, the functions of a university (presented in Exhibit III-8) represent categories of work requirements. To conduct fact-finding and subsequent analysis, the project team organizes its own work according to these functions. Once the work is organized, information related to more than one function must be communicated among team members. Functions indirectly related to teaching and research must be examined with particular care, since it is more difficult to determine whether the level of performance and efficiency supports university strategy and direction. Examples of indirectly related functions are information systems and accounting.

Identify Key Success Factors

Key success factors are the critical activities, usually few in number, that must be performed successfully to achieve the university's strategic goals. They are a subset of its total work requirements.

Information on work requirements and the strategic environment are available from a number of sources

TYPE OF INQUIRY	POSSIBLE INFORMATION SOURCES	
	INTERNAL	EXTERNAL
Work Requirements/ Work Currently Performed	■ Budget data ■ Interviews ■ Process flowcharts ■ Management reports ■ Building tours ■ Surveys ■ System descriptions	■ Other university organization charts ■ Outside experts/consultants ■ Periodicals and other literature
Strategic Environment	■ Annual reports ■ Interviews ■ Management reports ■ Enrollment analysis ■ Strategic plans	■ Other university plans and reports ■ Other university budgets ■ Other university interviews ■ Government publications ■ Professional publications ■ Surveys

EXHIBIT III-7

The work requirements of a university reflect its particular functions

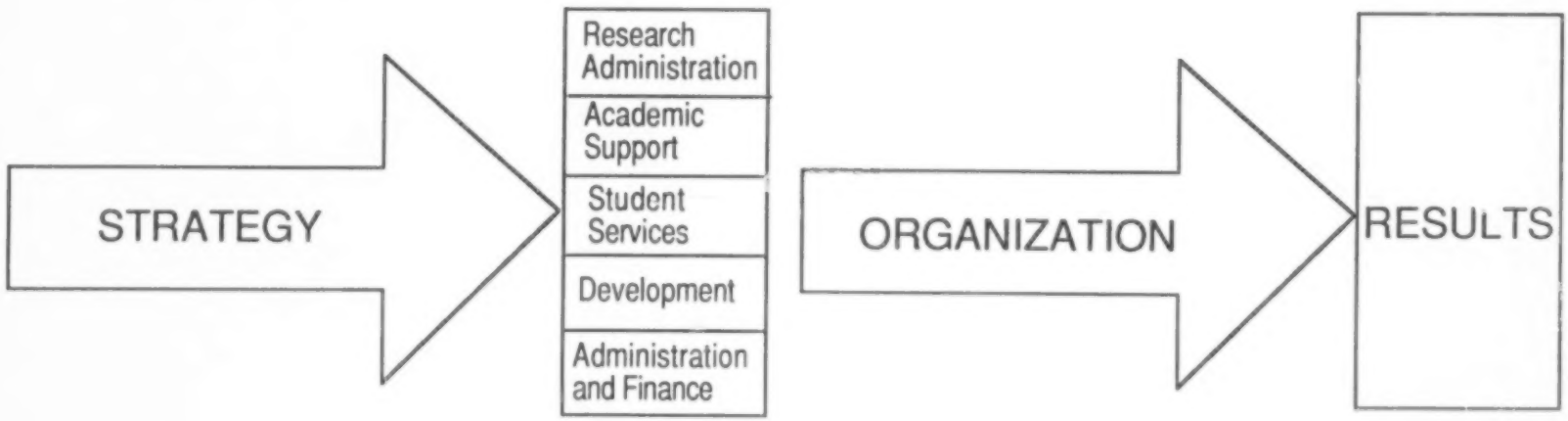


EXHIBIT III-8

Identification of key success factors offers insights that will guide the remainder of the study. These include activities for which increased effectiveness and efficiency may have a disproportionate impact on the university's performance, and those that could be changed only with great risk to the university's competitive success.

Confirm Issues And Develop Hypotheses

The findings that result from defining work requirements give rise to various explanatory hypotheses. These hypotheses may in turn suggest a number of alternative responses to problems that have been identified. This "logic network" (illustrated in Exhibit III-9) constitutes the framework for selecting subsequent areas of investigation.

Refine Cost Reduction Targets

The network of hypotheses and alternative areas for further investigation are matched with the initial description of project objectives. The focus of additional investigation may be narrowed, depending on the results of this analysis, and this in turn will require that the project team modify the study plan.

Issues are confirmed and hypotheses are developed in logic network

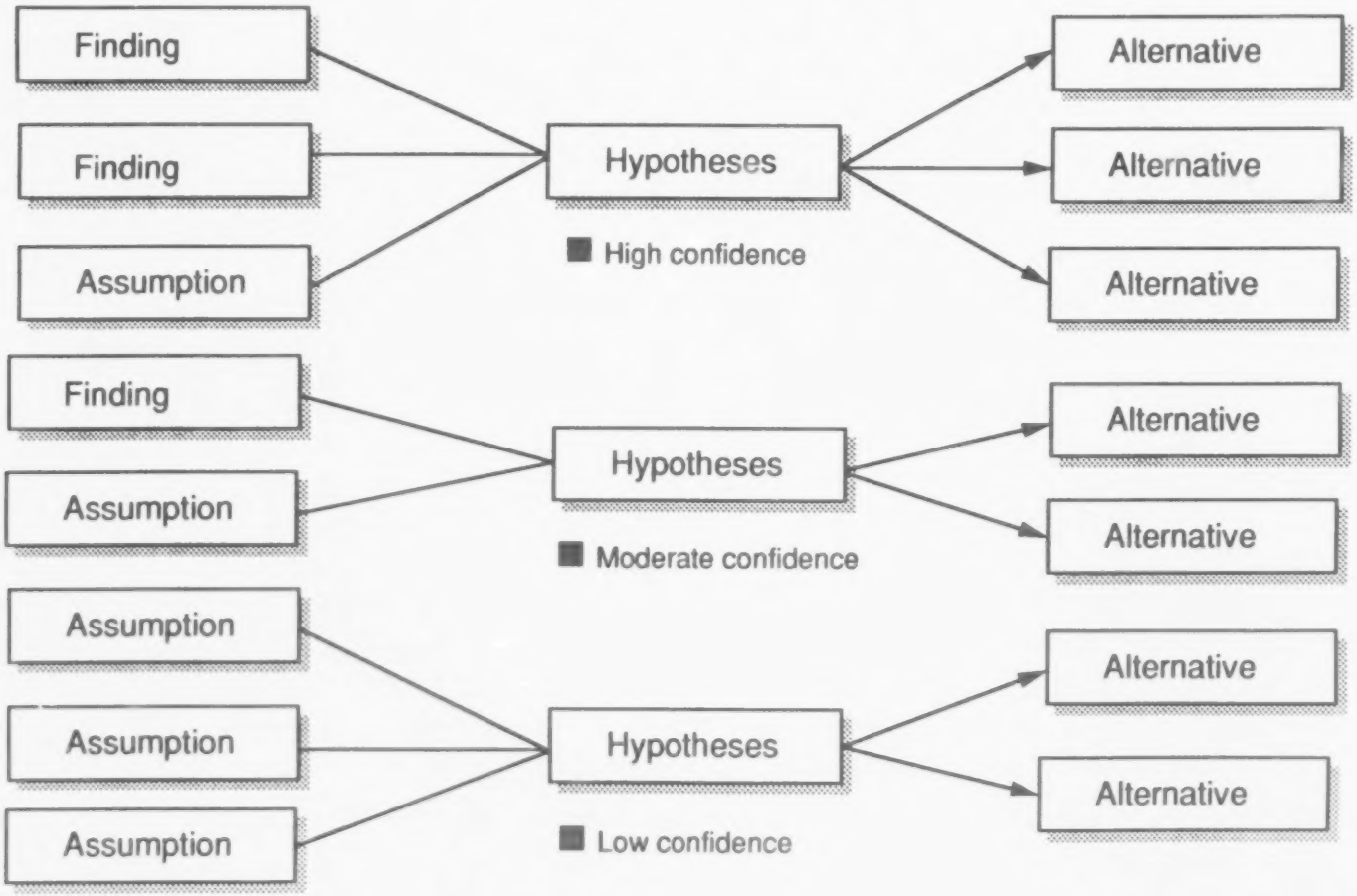


EXHIBIT III-9

Validate Understanding

Team members will determine, through periodic discussion, that they have achieved an in-depth understanding of the university's strategy, work requirements, external environment, and key success factors. The findings from these steps, along with any modifications in cost reduction targets and initial observations, are then presented to the steering committee. In this presentation, the president will be informed of the project's progress. The presentation will also give the president the opportunity to express disagreements, if any, with the project team's thinking and direction.

* * * * *

The study of "Urban State" reveals the way the results of the fact-finding task give direction to the subsequent tasks of the cost management process.

"URBAN STATE"

The aim of the study of "Urban State" was to examine opportunities for cost reduction in redistributing responsibilities between central university units and the colleges.

In the fact-finding task, a number of basic techniques were used - review of organization charts, administration of position surveys, and interviews with Urban State managers and selected staff - to identify the functions performed at each college and those performed on a

universitywide basis, as well as to determine the way work was performed and by whom. The techniques were helpful in identifying positions with similar responsibilities throughout all colleges, so that their workloads could be compared. The subsequent analysis revealed specific areas in which roles and responsibilities overlapped and in which there was duplication of effort. The specific functions of these positions were described and criteria were developed for making recommendations concerning which functions were performed appropriately and which could be improved by placing them at the college or university level.

Ten functions were identified as being shared, to varying degrees, by central university units and the colleges: affirmative action, facilities planning, budget planning and processing, admissions, registration, academic advising, grant and contracts application and processing, development, fund-raising, and public affairs and promotion.

Alternatives analysis was then used to determine whether particular functions should be centralized, decentralized, or shared by the university and the colleges. Criteria with which to judge the relative merits of centralizing, decentralizing, or sharing this function were tested and applied. (Exhibit III-10 depicts the criteria developed for evaluating alternatives in academic advising at Urban State.)

The study of "New England University" illustrates the way fact-finding, by identifying a university's work requirements, can reveal areas for improvement.

* * * * *

"NEW ENGLAND UNIVERSITY"

The study of "New England University" examined the most effective distribution of functions between the university and its regional campuses.

The fact-finding phase included reviews of several years of university regional planning documents, which outlined the evolution of university and campus missions. One

URBAN STATE
EVALUATION OF ALTERNATIVES FOR ACADEMIC ADVISING

Criterion	*Current Performance Level*	*Alternative Arrangement Increased Centralization*
Streamlines decision-making and eliminates duplication	▬	●
Is responsive to students	◑	◑
Promotes organizational coordination and consistency, including adapting to workload peaks	▬	●
Simplifies reporting relationships and communications	▬	◑
Leverages managerial skills and other key resources, such as automation	▬	●
Facilitates managerial development and succession	○	◑
Permits clear alignment of authority and accountability	○	●
Provides for effective external communication	NA	NA
Allows use of alternative revenue sources	NA	NA
Reduces costs	▬	●

Recommendation: Centralize function
Exceptions: Provide college capacity where campus is at remote location, there are specialized advising needs, and/or number of students has a significant impact on advising function.

▬ Less Than Adequate In Meeting Criterion ○ Adequate In Meeting Criterion ◑ More Than Adequate In Meeting Criterion ● Outstanding In Meeting Criterion

NA - Not Applicable

EXHIBIT III-10

regional campus was chosen for intensive study. Reviews of organization charts, interviews with key administrators, and analyses of position survey questionnaires yielded definitions of the key functions performed by both the main campus and the regional campus, determination of how decisions were made, and identification of the numbers and roles of staff who performed each function. Interviews with staff helped reveal discrepancies between the university and regional campus missions, as well as the operational impediments to accomplishing both.

Administrators at the main campus explained, for each function, the "centralized" perspective on the relationship between the university and the regional campus. An interview with the director of the regional campus offered perspective on the similarities and differences in operations among the regional campuses.

Decision/responsibility matrix analysis, a tool used to understand the decision-making process, was applied here in an effort to determine how decisions were made and how decision-making authority was delegated to the regional campuses. The technique has broad applicability in identifying overlapping or conflicting authority as well as in evaluating organizational arrangements and key management processes. The matrix arrays the participants in the decision-making process against key decisions to show the various roles of decision-makers.

The analysis of functions and staffing at the regional campus revealed little opportunity to consolidate or centralize services. Despite the small size of the regional campus staff, functions such as student registration, academic advising, and maintenance, had to be retained on-site because of the difference between university and regional campus mission and the distance to the main campus.

ANALYSIS

The purpose of analysis (Exhibit III-11) is to use the information obtained in the fact-finding phase to develop cost reduction opportunities. Analysis is perhaps the most difficult

In analysis, organizational performance is assessed as the basis for identifying opportunities for improvement

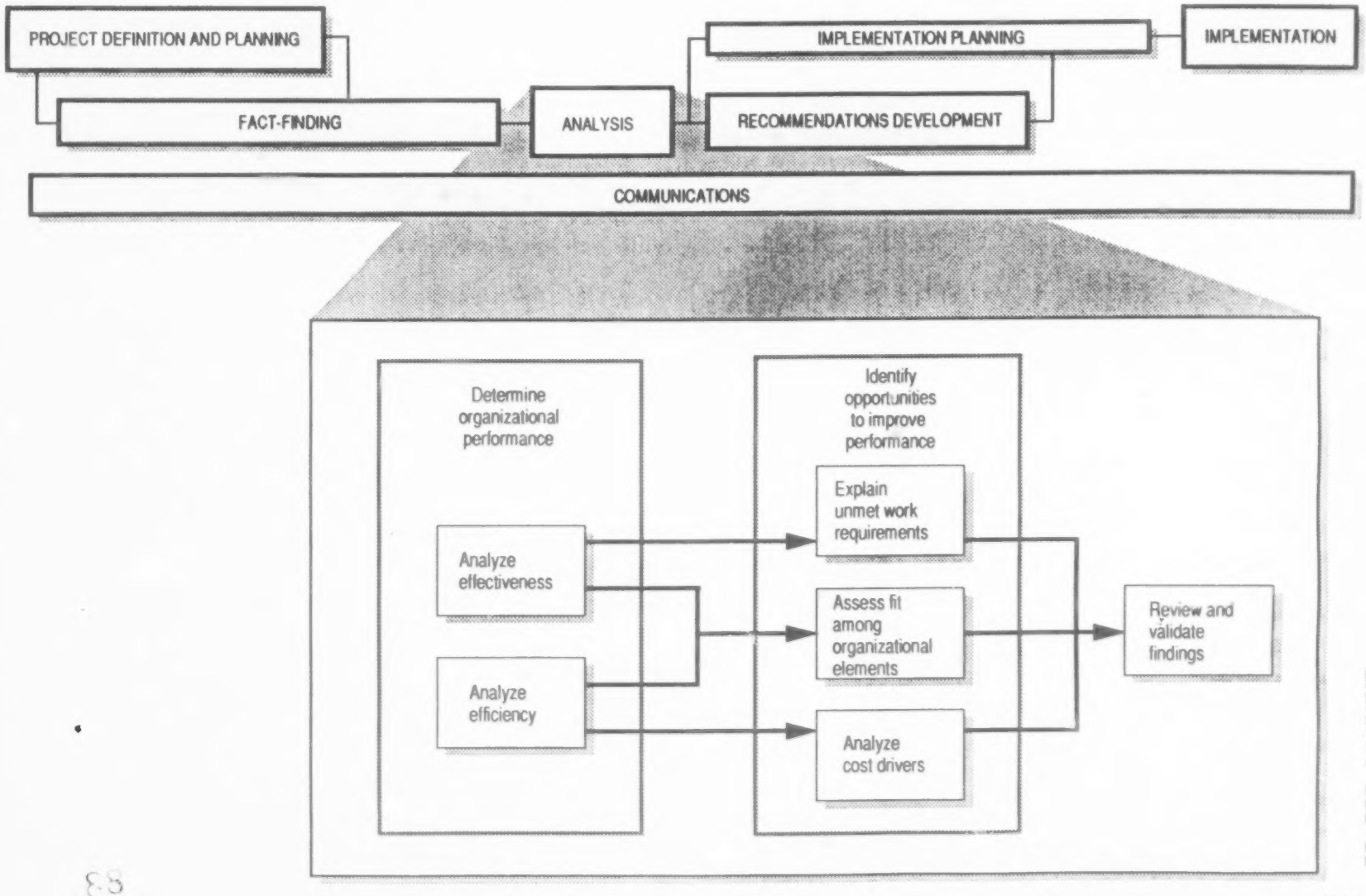


EXHIBIT III-11

task, as it involves narrowing a necessarily broad array of facts, issues, and hypotheses to a manageable number of areas that offer the best opportunities for reducing costs. The key to narrowing the "analytical cone" (illustrated in Exhibit III-12) is a series of decisions for progressive elimination of less promising issues and hypotheses. Through documentation and review of cost reduction opportunities, the project team establishes the means for focusing these decisions on areas for further investigation. Each opportunity includes a description, statement of supporting evidence, justification, and priority.

Determine Organizational Performance

The team focus is on assessing and improving the effectiveness and efficiency of the university and its operations as a way to reduce costs and improve services. As the sequence of steps in analysis indicates, effectiveness and efficiency in performance are directly related to accomplishment of work requirements (defined in the fact-finding phase).

There is no single, optional format for documenting effectiveness and efficiency (organizational performance). The study team can prepare statements documenting problems in achieving effectiveness and efficiency. These statements will include descriptions of the problems, evidence, causes, and implications. Comparisons can be made between work actually performed or assigned and work required to accomplish results.

The analytical cone is narrowed by eliminating less promising alternatives for investigation

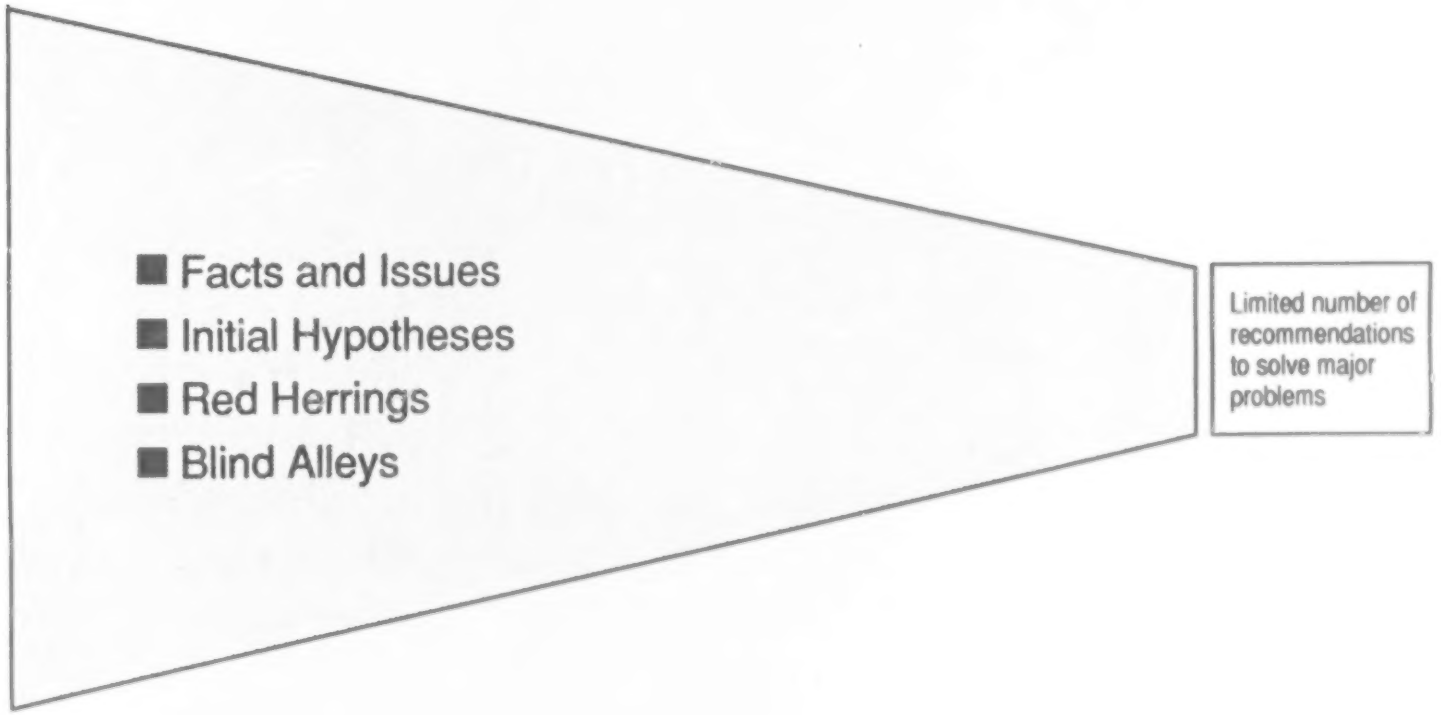


EXHIBIT III-12

A function is effective to the extent that the work actually performed reflects the work requirement. In this part of analysis, particular attention should be paid to the most important work requirements (the "key success factors").

Efficiency is a function of university organization of resources to meet work requirements. A university can be said to be inefficient if it performs unnecessary activities (ones unrelated to work requirements), if it performs necessary activities by using more resources than are required, or if it has resources that are not used.

Inefficiency is typically detected by comparing the current and past costs of performing a given activity, identifying the cost of comparable activities, determining costs on the basis of general management knowledge, or revealing particular expenditures as excessive. At this point in the analysis, organizational performance is assessed at a general level that subsequently serves as a basis for more detailed analysis, as needed, of particular resources expended and work accomplished.

Identify Opportunities To Improve Organizational Performance

The analysis of organizational effectiveness and efficiency produces a "report card" that measures performance against work requirements. The next step involves identifying opportunities

to improve specific areas of performance. Examples of evidence indicating such opportunities are the following:

- A doubling of costs of college administration over the past five years in three out of six colleges of a university.

- An increase of 50 percent in the number of organizational units providing student services, while enrollment remained constant.

- An increase in the number of staff responsible for coordinating facilities planning, without concurrent growth of new facilities.

Three specific analytical tasks assist in identifying these opportunities.

1. Explain Unmet Work Requirements

When certain work requirements are unmet, the team should investigate the cause. The requirement may not be recognized or acknowledged, there may be a flaw in the organization that prevents the requirement from being met, or the university may have deliberately decided not to invest in meeting the requirement.

2. Analyze Cost Drivers

For instances in which costs are too high, (i.e., more resources are used than are warranted or needed), the team will analyze the cost driver to identify the reason. One reason may be that certain activities, identified earlier in the analysis, do not contribute significantly to accomplishing the university's purposes.

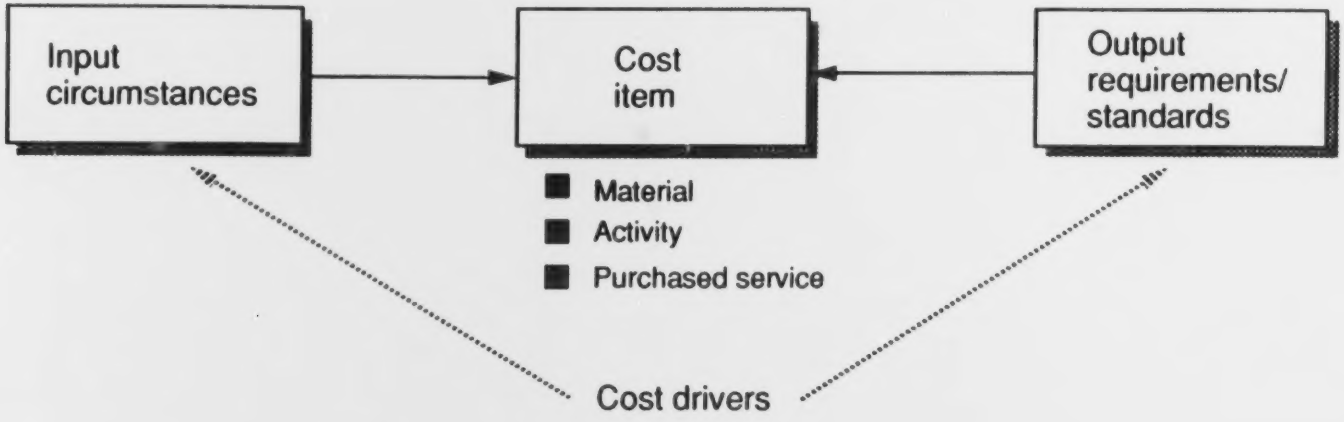
Cost driver analysis (Exhibit III-13) consists of a detailed review of work requirements that contribute the most to overall costs. Steps in the review include:

- Identifying work that is the most costly
- Determining whether the standards of service that require the cost are too high
- Determining ways of modifying the work or eliminating it, and assessing the impact on overall services of doing so.

3. Assess Fit Among Organizational Elements

Poor organizational design can hinder performance and/or create additional costs. Such problems often come to light by examining the "fit" or relationship among organizational elements.

Cost driver analysis focuses on work requirements that are most costly to the university



Analytical Process

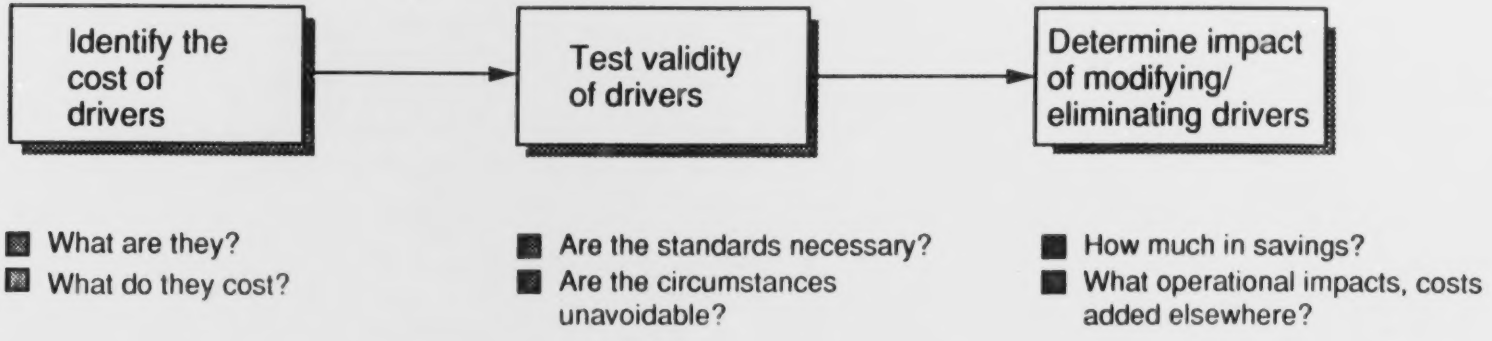

Identify the cost of drivers
Test validity of drivers
Determine impact of modifying/ eliminating drivers
What are they?
What do they cost?
Are the standards necessary?
Are the circumstances unavoidable?
How much in savings?
What operational impacts, costs added elsewhere?

EXHIBIT III-13

The study team evaluates the fit through the following steps:

- Assessing the structure against general attributes of soundness (Exhibit III-14)

- Identifying major strengths and weaknesses of the structure by determining whether there is a correspondence between the general attributes and the services/results

- Comparing the structure to the requirements dictated by university strategy

- Developing criteria for selecting alternative structures.

The organizational elements to be examined for fit are structure, culture, processes, and resources. Their relationship to the overall organizational model is illustrated in Exhibit III-15, and they are described as follows:

Structure is the formal definition of roles, responsibilities, authorities, and accountabilities. The basis for specialization of efforts, it is the most visible, well understood component of organization. Structure encompasses the concepts of organization, including organization of functions, degree of centralization/decentralization, job design (such as staff and line roles), and spans of control or organizational depth.

Part of analysis consists of assessing structure against general attributes of soundness

- Relationship of elements
- Simplicity
- Completeness
- Congruence of authority and responsibility
- Consistency
- Adaptability
- Responsiveness
- Focus

EXHIBIT III-14

Examining the relationship of organizational elements often reveals the cause of problems in organizational peformance

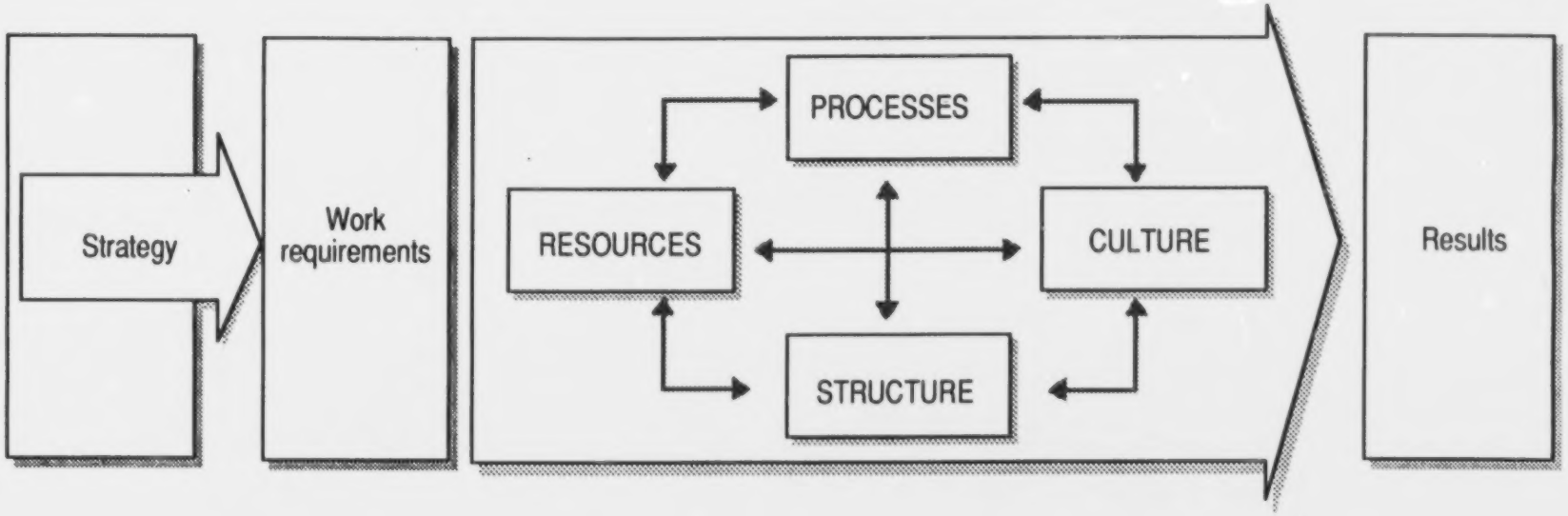


EXHIBIT III-15

When structure is assessed, the top-management organization requires special attention. This is done both to avoid criticism that top management has escaped scrutiny and because analysis of this part of structure is particularly complex.

Culture consists of the shared values, beliefs, and norms of an orgnization's members. Strongly influenced by the society at large, it is difficult to change. Culture encompasses a number of elements: communication, organizational hierarchy, team vs. individual approach, risk-taking, external image, and leadership style.

In analyzing this element, the appropriateness of the culture to the work requirements must be defined. In addition, the way other organizational elements (structure, processes, and resources) shape culture must also be understood, and the limits to cultural change must be grasped.

Processes are the formal and informal systems and procedures used by the organization to reach decisions, guide work, and allocate resources. Some specific processes include planning, development, operations, human resources, and management information.

The major steps in analyzing processes are as follows:

- Evaluate processes against work requirements.
- Understand the relationship of processes to the other organizational elements, including staffing (resources).
- Identify ineffective or inefficient processes.

Resources are the human, physical, market, and financial assets, both tangible and intangible, of the organization. They include staffing, leadership, skills, facilities, capital, and market position.

The key steps in analyzing resources are as follows:

- Understand the current allocation of manpower, skills, and facilities.
- Evaluate the match of resources to work requirements.
- Evaluate the efficiency of work methods and facilities use.
- Identify misallocated resources or skill shortages.

- Assess the impact of structure on resource requirements (e.g., fragmentation or duplication).

- Project future changes in requirements.

A number of analytical tools (shown in Exhibit III-16) can be useful in assessing the fit among organizational elements. These tools will vary in their applicability to this phase of the analysis.

Review And Validate Findings

At this point in the analysis, the team will coordinate its findings and present them to the steering committee for approval, rejection, or modification.

* * * * *

The study conducted for "AMU" shows how, in the analysis task of the cost management process, specific opportunities for enhancing performance can come to light when functions are measured against the criteria of effectiveness, efficiency, and organizational fit.

"AMU"

This study for a major university ("AMU") examined opportunities to manage library system costs.

Tools used in analysis

PROJECT TASK	Activity analysis	Joint team forms review	Service users survey	Decision/ responsibility matrix analysis	Mission and role analysis	Spans and levels analysis	Process analysis	Productivity measurement	Workload balancing	Cost/ benefit analysis	Make/ buy analysis	Alternatives analysis
Fact-finding	●	●	●		●		●			●		
Analysis												
Structure	◒			◒	●	●						●
Culture					◒							
Processes			◒	●			●					◒
Resources	●		●			●		◒	●			●

● Best time to use tool

◒ Tool can be effective at this time

EXHIBIT III-16

The AMU study illustrates the essential focus of most cost analyses: understanding and analyzing work as a basis for effecting improvements in efficiency and effectiveness at the unit and sub-unit level.

Through interviews and document reviews, the function of each unit in the library system, the key processes, and the roles of individual positions in them were identified. These findings were refined through review of position survey questionnaires administered for all positions, as well as through additional interviewing at the staff and manager levels.

The relationship between top-level structural change and opportunities for improvement in individual units was particularly important at AMU and illustrates a typical interplay between broad and detailed change. At AMU, improvements in functional relationships through reorganizing work into four functional clusters set the stage for adjustment in supervision and workload within units.

Each process in the library was subjected to detailed analysis to determine its fit within the organization and its efficiency and effectiveness. For example, within monograph acquisitions, the processes examined included firm order processing, approval order processing, recording firm orders, recording approval orders, searching out-of-print monographs, and searching lost and missing monographs. For each process, the tasks and positions involved in carrying it out were examined. The analysis also covered workload sufficiency and balance, amount of supervision required, opportunities for automation, work scheduling, skill level required, and change in workload indicators over time. Various staff configurations and workloads were projected and were compared with current arrangements. The aim was to assess possible change in effectiveness and efficiency as a rationale for the recommendations subsequently developed.

Service users' surveys were employed to assess workload and schedules in areas of library operation that focused directly on the faculty, staff, and students as "consumers" of services. For example, this technique was applied to determine whether the service desks - circulation, reserves, and reference - were adequately staffed. The evaluation process involved reviewing staff schedules and patron counts at various times throughout the day. From this information two staffing mismatches were identified:

- Some desks were overstaffed at certain times of the day, suggesting there were opportunities to cut back staff.

- **The reference desk was staffed at certain times with two librarians, despite the fact that nonlibrarian staff accompanied by one librarian was sufficient.**

Services were also examined in terms of their relevance to the overall purposes of the library and the university. The cashier service is an example. This service was used primarily to provide change for the parking garage located on the lower levels of the library. The function was evaluated by interviewing the library administrators to determine whether the service could be obtained elsewhere. Since change machines could adequately handle this service, it was eliminated.

The analysis of AMU examined the important relationship between structure and efficiency. Overall restructuring of the library provided opportunities for reorganization and reducing costs at lower levels of the organization through consolidation of units, removal of excess supervisory levels, elimination of duplication and overlap of functions, and the like. Such a detailed level of analysis lent considerable insight to the overall cost analysis. Findings from the position survey questionnaires were useful in obtaining and arraying information for analysis in understanding detailed levels of work. The improvements were the sum of many small adjustments that called for understanding of work in all its detail. This level of activity often eludes analysis because of the exhaustive examination it requires.

RECOMMENDATIONS DEVELOPMENT

Developing recommendations requires creative thinking, rigorous analysis, and sufficient time and task force effort to ensure that all reasonable alternatives are considered, that they are subjected to a carefully developed set of criteria, and that the implications of preferred alternatives have been carefully considered. The six steps in this task (shown in Exhibit III-17) are presented in the following paragraphs.

In developing recommendations, alternatives are identified and evaluated

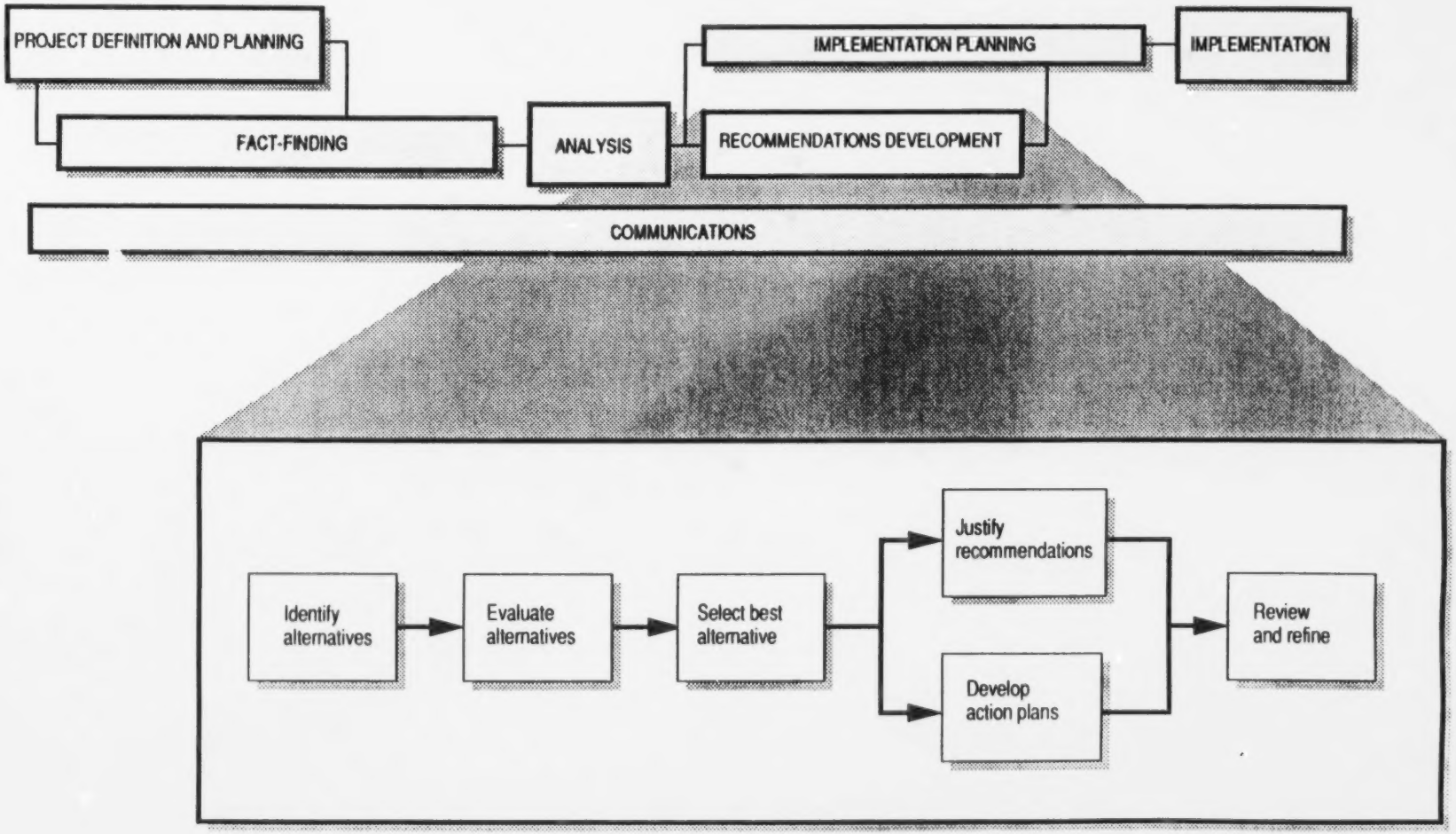


EXHIBIT III-17

Identify Alternatives

Development of recommendations begins at the start of the project. Anticipating the recommendations development task from the outset and noting ideas about possible recommendations can be an important contribution to identifying alternatives.

The informal rules governing this step should be to encourage the team to question all current practices, and to promote development of alternatives without immediately focusing on the obstacles to their implementation. Addressing the work requirements considered most important in accomplishing the university's mission (the key success factors) should be a major focus. An important consideration is achieving a direct, one-to-one relationship between issues identified and recommendations proposed. In other words, each issue raised should be addressed by one or more recommendations.

Evaluate Alternatives

This step will serve several purposes: it will ensure the feasibility of the recommendation, it will provide justification for use by the steering committee and before other university audiences, and it will serve as a basis for effective implementation planning.

The evaluation should be based on explicit criteria determined by the considerations of effectiveness and efficiency that shape the entire process of cost management. These criteria are as follows:

- How closely does the alternative meet work requirements?
- To what extent does the alternative further or support the university's strategic direction?
- How well does the alternative simplify or reduce the cost of essential work?
- Does the alternative eliminate nonessential work?

The evaluation of alternatives should be as thorough as possible because of the magnitude of the changes that can result. The alternatives may result in redesigned jobs, modified managerial structures, and changes in the processes through which work is accomplished. These changes represent institutionalization of the team's insights on work requirements, and as such help ensure their adoption. In other words, once new position responsibilities and processes to accomplish work have been defined, it is likely that they will persist.

Each recommendation should be evaluated for its impact on services, costs, and intangible elements. The impacts should be expressed in terms of cost wherever possible, and the interactions among the impacts should be identified. Rigorous analysis is necessary to develop meaningful savings estimates as a means to defining the recommendation's contribution to greater efficiency. Exhibit III-18 illustrates in chart form the process of evaluating these impacts.

Criteria should be set for measuring savings and for determining what constitutes real savings. Often, reductions made in one area will require additional cost and more staff time in another. Alternatives should therefore be evaluated to ensure that they permanently eliminate work, rather than simply eliminate current staff or costs that may reappear as workload continues at its current level.

A number of the analytical tools can be useful in identifying or evaluating the recommended alternatives. Exhibit III-19 charts these tools and the optimal time for using them.

Select And Justify Alternatives

If the evaluation of alternatives is conducted properly, the most appropriate alternative will often be already apparent.

Assessing the impact of a recommendation requires vigorous analysis

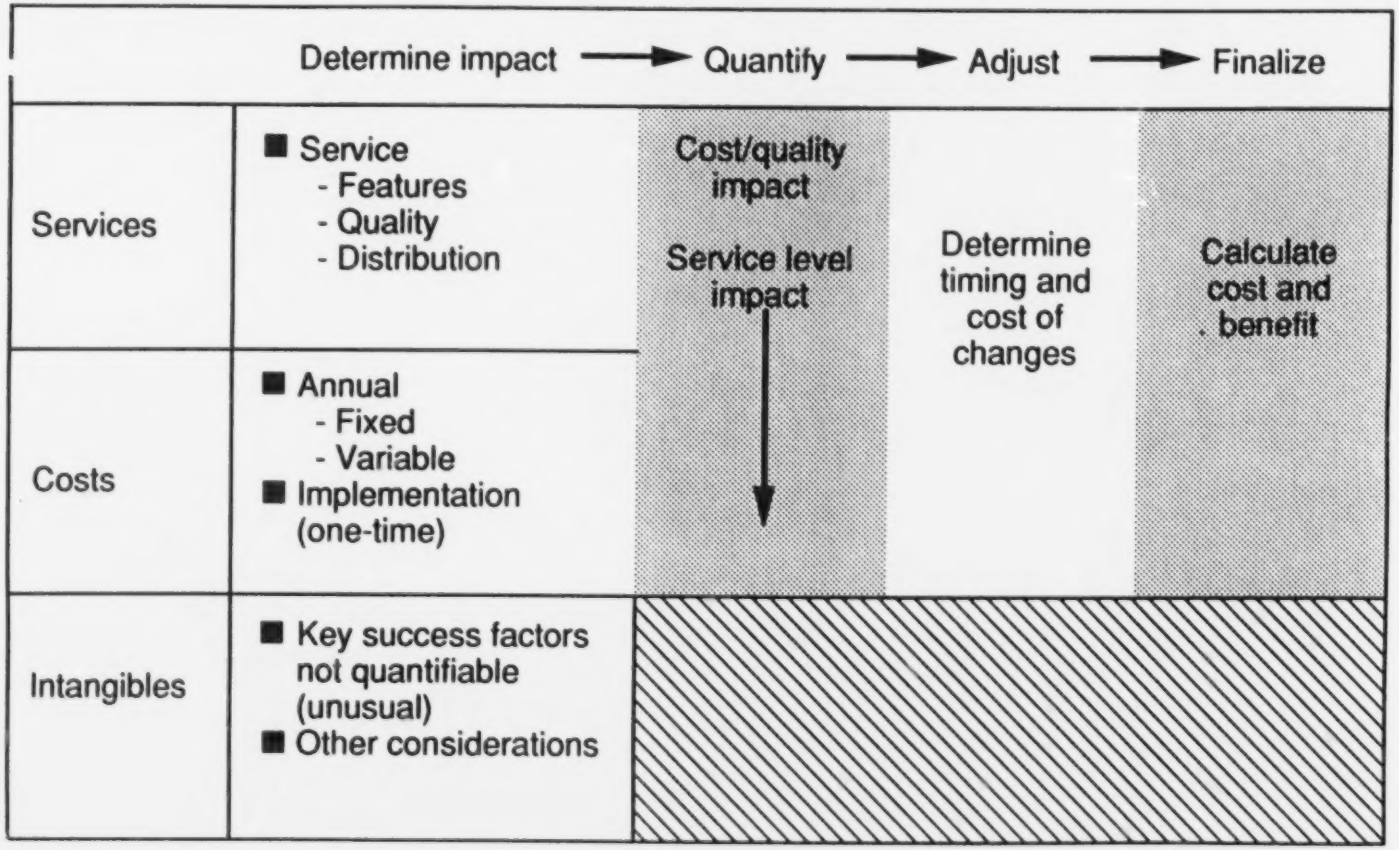


EXHIBIT III-18

Tools used in recommendations development

PROJECT TASK	Activity analysis	Joint team forms review	Service users survey	Decision/ responsibility matrix analysis	Mission and role analysis	Spans and levels analysis	Process analysis	Productivity measurement	Workload balancing	Cost/ benefit analysis	Make/ buy analysis	Alternatives Analysis
Fact-finding	●	●	●		●		◒			●		
Analysis												
Structure	◒			◒	●	●						●
Culture					◒							
Processes			◒	●			●					◒
Resources	●		●			●		◒	●			●
Recommendations development				●	●		●	●			●	●

● Best time to use tool

◒ Tool can be effective at this time

EXHIBIT III-19

The justification will thus be based on the analysis conducted during the previous step - alternatives evaluation.

Develop Action Plans

Preparation of action plans demonstrates the feasibility of recommendations by showing staff that they can be implemented. Action plans detail tasks to be accomplished, schedule, individuals responsible, relationships among tasks, and one-time and ongoing implementation costs. These plans are the starting point for implementation and serve as the context within which implementation planning takes place.

Review Recommendations

Recommendations should be presented to the steering committee for its review. The project team should make certain that they are presented in as thorough and final a form as possible, perhaps with several alternatives to consider in the case of particularly controversial recommendations.

The team may be tempted to seek approval for recommendations, particularly controversial ones, at an early, conceptual stage before they are subjected to full analysis. This temptation should be resisted, because to seek early approval would

negate the value of the rigorous analysis of alternatives which provides significant value added to results of the cost analysis process.

* * * * *

In the AMU study, the recommendations development task included careful selection of criteria for evaluating the various alternatives identified for change.

"AMU"

In the recommendations development task of the AMU study, each alternative identified for reducing costs was viewed as a "project." From the outset of the study, each project was identified and informatin supporting it was assembled. This informatin took two forms. First, a series of questions was answered about each project:

- **What is the proposed change?**
- **What part of the work now performed in a given function would no longer be needed and with what justification?**
- **How would the rest of the work be accomplished?**
- **What would be the cost savings?**
- **What would be the benefits in efficiency and effectiveness of service delivery?**

Second, for each project, cost savings, priority, and rationale were identified. Several criteria were developed and applied to the project, includng:

- **Extent to which it supported the university mission**
- **Size (number of staff and budget of unit affected)**
- **Magnitude of potential cost savings**

- **Significance of opportunity for improvement in efficiency and effectiveness**

- **Difficulty in implementation (amount of disruption, resistance)**

- **Impact on other areas of university operation.**

Once the alternative recommendations were identified and evaluated, they were presented at a meeting of the president's cabinet for review and critique. The comments made in this meeting were used as the basis for further review before final recommendations were submitted.

IMPLEMENTATION PLANNING

Implementation planning (Exhibit III-20) centers on the human resources aspects of cost reduction and on coordination of the overall plan for change.

Develop Implementation Principles

The university must effectively communicate the rationale for change. It should be presented and perceived as part of a progressive, coherent strategy, not a reaction to temporarily adverse conditions.

The first step is development and promulgation of the principles that will guide implementation. This step is extremely important because it affects the university's integrity, its image and reputation, and the morale of its employees.

Implementation planning centers on human resources and overall coordination

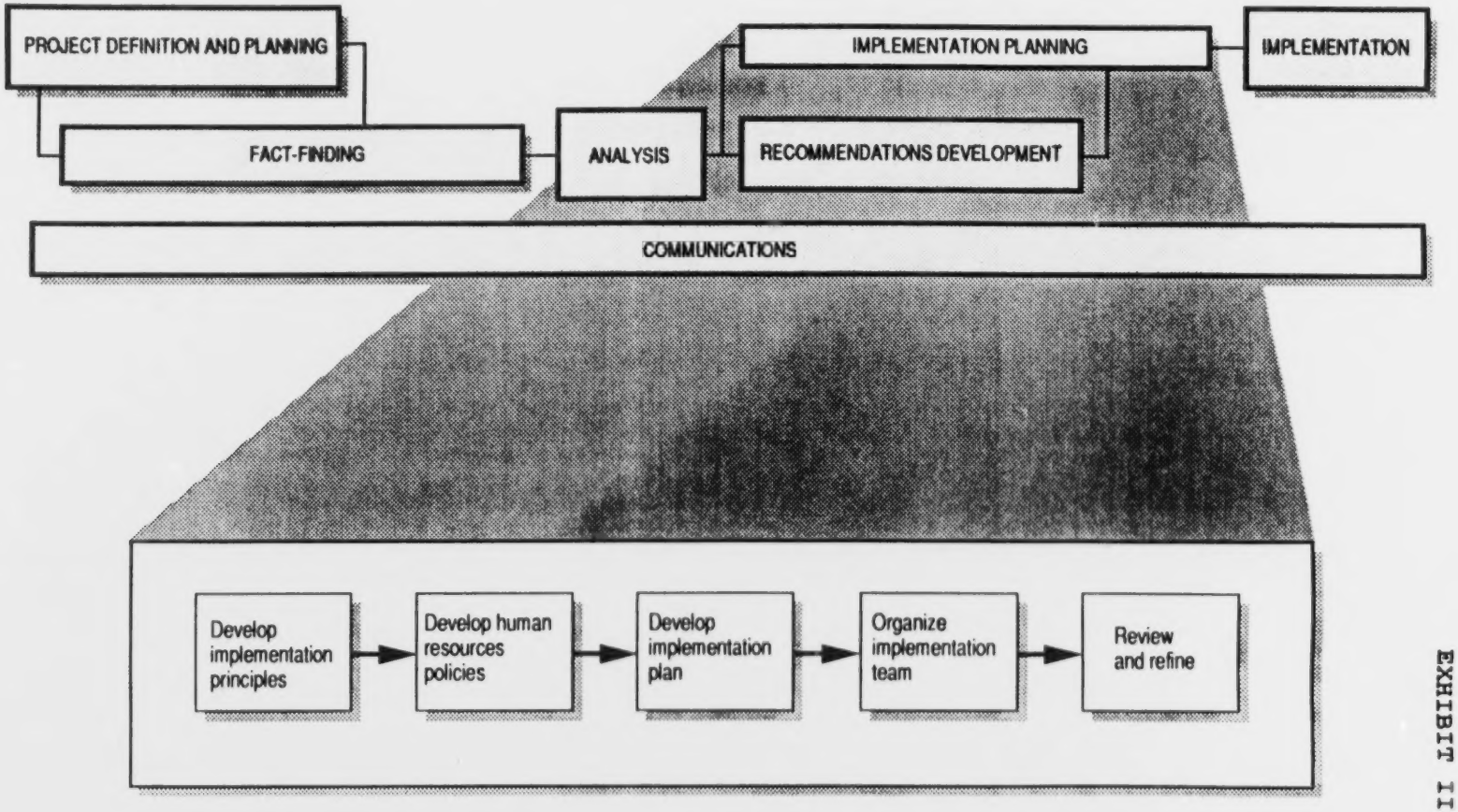


EXHIBIT III-20

An example of these principles is the belief that it is essential to be fair to employees during periods of staff reductions. Key elements of the principle of equitable treatment include:

- Effective communications, including advance notice of major actions
- Consistent selection criteria
- Informed decision-making on selection of employees for reduction or retention
- Preparation for and ease of procedural/logistical aspects
- Reasonable severance arrangements
- Post-termination support/assistance.

Develop Human Resources Policies

Because universities are in the business of providing services, staff costs constitute the biggest percentage of support service expenditures. Therefore, although not all recommendations will affect staffing levels, it is likely that a

number will. Many approaches can be taken to reducing the number of employees (Exhibit III-21). The university's circumstances and philosophy will determine which are appropriate. The principles defined for implementation should be translated into policies for effecting the changes.

Line management, which will make the personnel decisions, should be given guidelines defining acceptable selection criteria and the requisite documentation for application of these criteria to staff reductions.

Develop Implementation Plan

The implementation plan integrates all the recommendations that have been approved with the human resources strategy that has been developed. The plan can then be completed in the following way:

- Review approved recommendations to determine the actions required.
- Set priorities for and create a sequence of tasks.
- Estimate resource requirements for tasks to be completed.
- Develop implementation schedule.

There are several aproaches to staff reduction

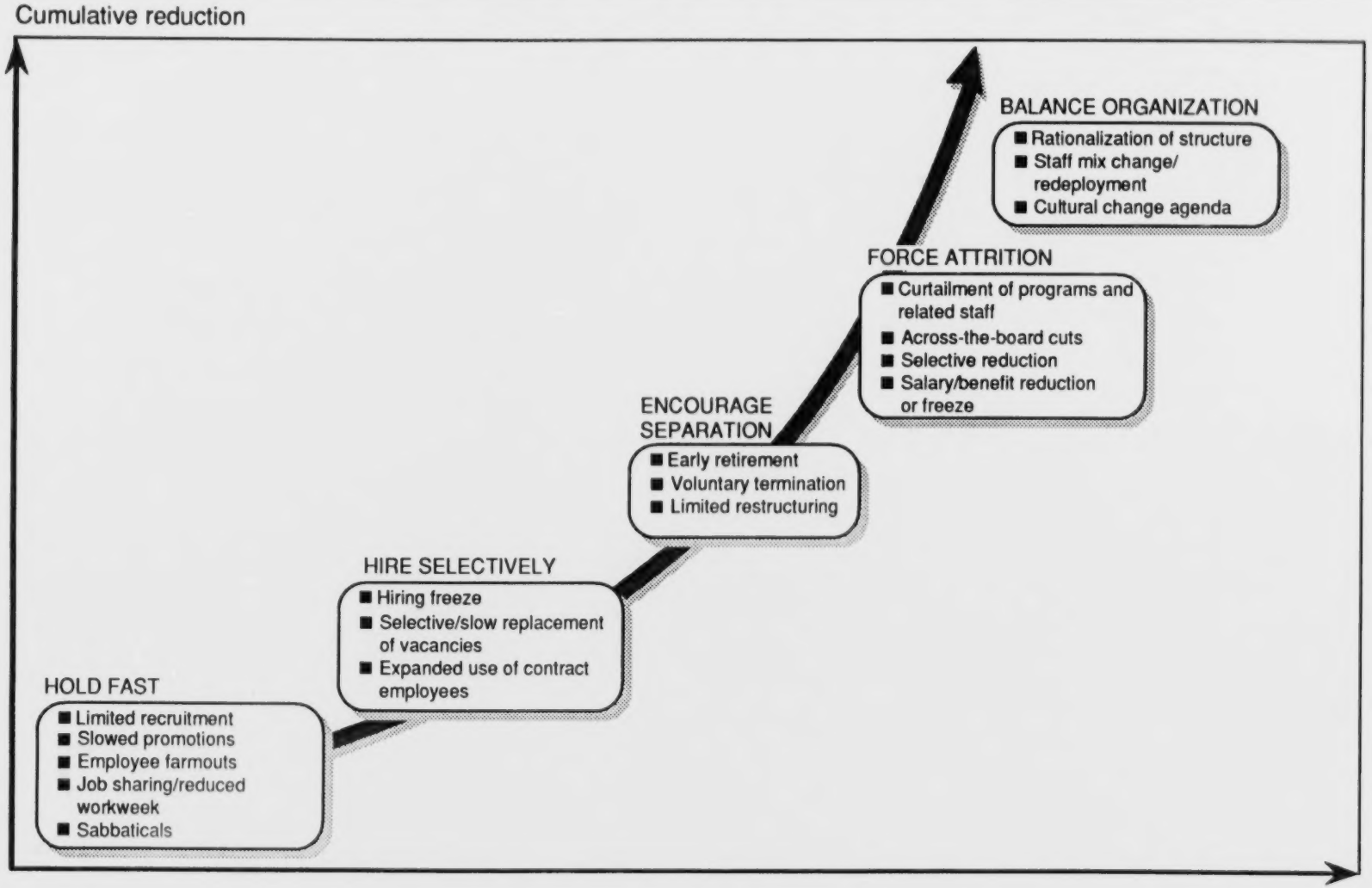


EXHIBIT III-21

Organize Implementation Team

A central element of the implementation plan is organization of the implementation team (Exhibit III-22). This team includes an implementation task force appointed by and reporting to the president. The task force is responsible for executing the implementation plan by coordinating all activities involved in carrying out the approved recommendations. These activities include monitoring the process and providing advice to managers who are responsible for day-to-day implementation.

Review

The president and steering committee should approve the principles, detailed plan, and implementation team organization before implementation begins. The plan should be reviewed by the university's human resources and legal departments to ensure compliance with applicable government regulations.

* * * * *

The implementation task of the Midwest State study illustrates the importance of communicating to the university community the need for change, and highlights the need for careful assignment of responsibilities for the implementation plan.

In the implementation team, the implementation task force has a central role

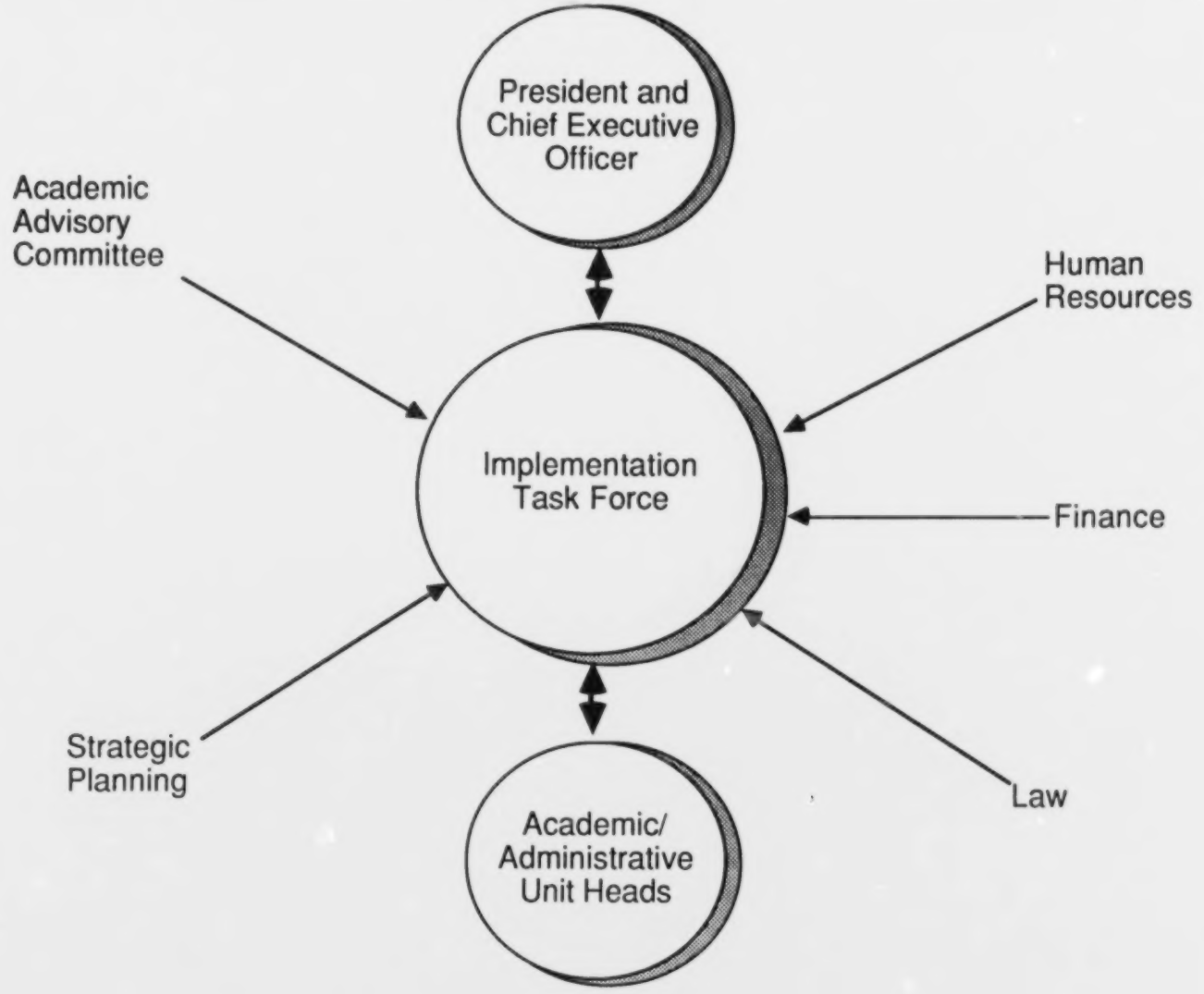


EXHIBIT III-22

"MIDWEST STATE"

The Midwest State study involved extensive implementation planning. The planning objectives were (1) to ensure that all university constituencies were aware of the study results, were given the opportunity to ask questions, and understood their role in the initial stages of implementation; and (2) to assign to the managers of each major university area responsibiity for assessing the recommendations and for planning step-by-step implementation of each.

A series of meetings (20 in all, organized by university function) were held to communicate the study recommendations to the university community.

Each cabinet member was given a period of several weeks to review the recommendations with key staff. Cabinet members were asked to indicate, for each recommendation, whether or not it should be implemented, or whether it called for further review. They were required to justify their decisions and, in cases where a recommendation was rejected, were asked to suggest alternatives.

IMPLEMENTATION

Implementation (Exhibit III-23) is the execution of the plan. The implementation team should monitor progress and report periodically to the president on issues that can be addressed by adjusting the plan and by actions at the line management level.

Implementation is the execution of the plan

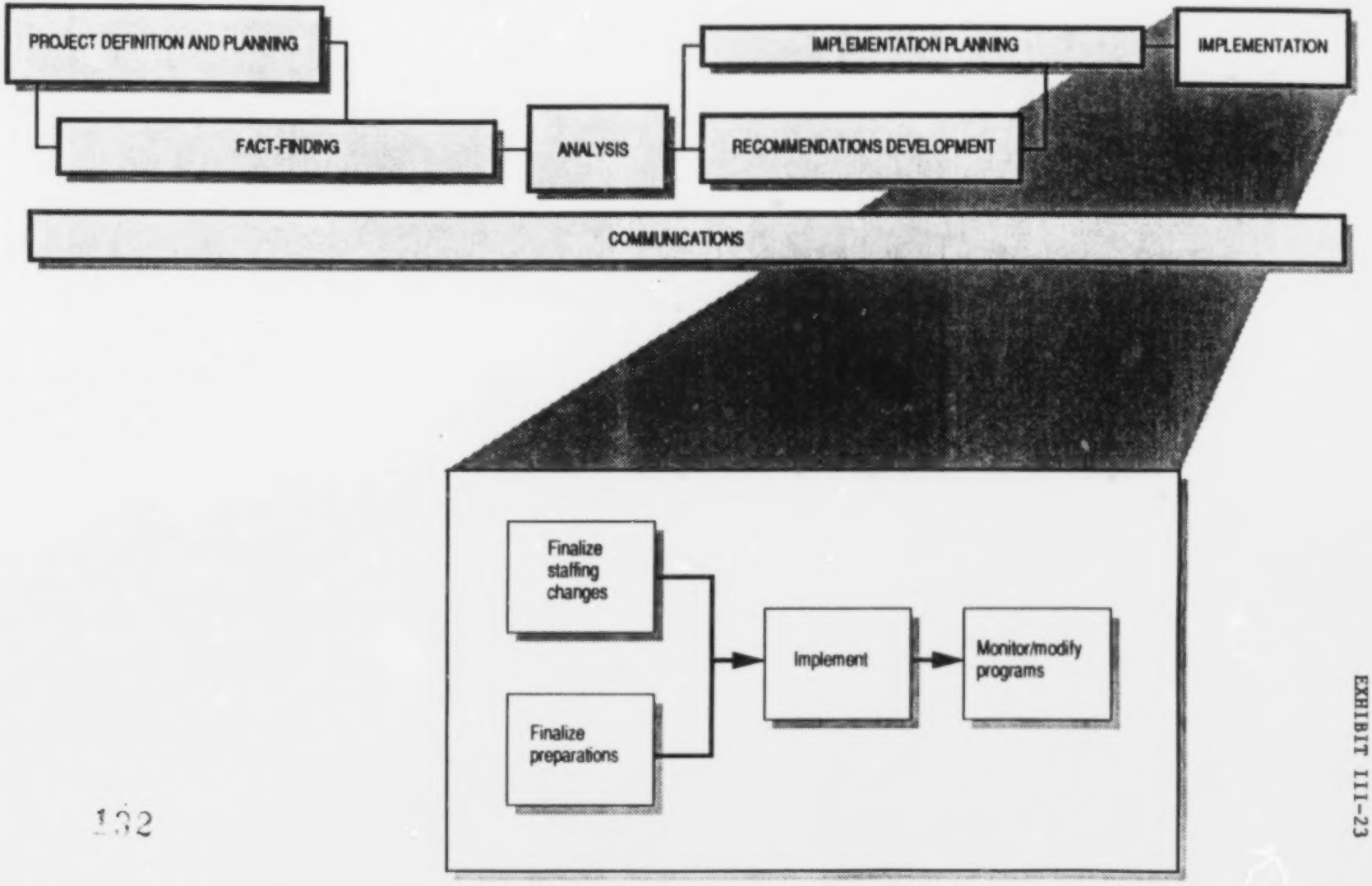


EXHIBIT III-23

A major set of implementation activities are those involving the personnel changes required to reduce staff. Line managers will make these decisions with supporting information furnished by the human resources department.

COMMUNICATIONS

The communications task is carried out throughout the study rather than as a final phase of the project. Employee communications are integral to most phases of the cost analysis. Consistency and timeliness are important aspects. Although communication is an ongoing process, for purposes of analysis it can be broken down into a number of steps (Exhibit III-24). Key communications should be timed to take place during major study phases (Exhibit III-25).

Prepare Communications Strategy

Communications can be best handled by taking an honest and timely approach that anticipates employees' concerns and seeks to minimize the stress they will inevitably feel.

Development of a strategy for communicating with employees throughout the course of the study should be concurrent with overall study planning. One reason is that regardless of how well executed the study, employees will find that reduction in

Communication is on ongoing process throughout the cost management study

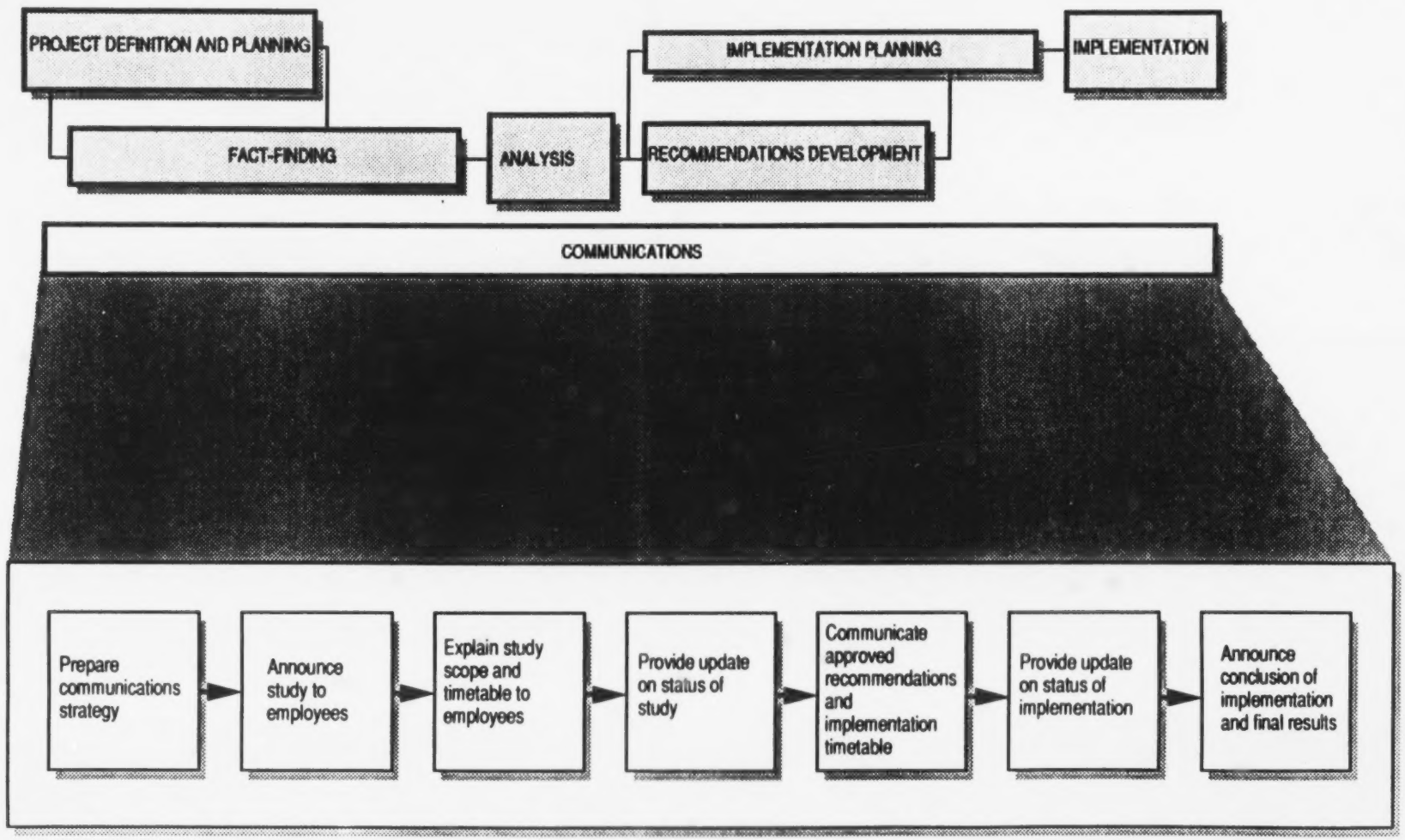


EXHIBIT III-24

Key communications must be carefully timed throughout the study period

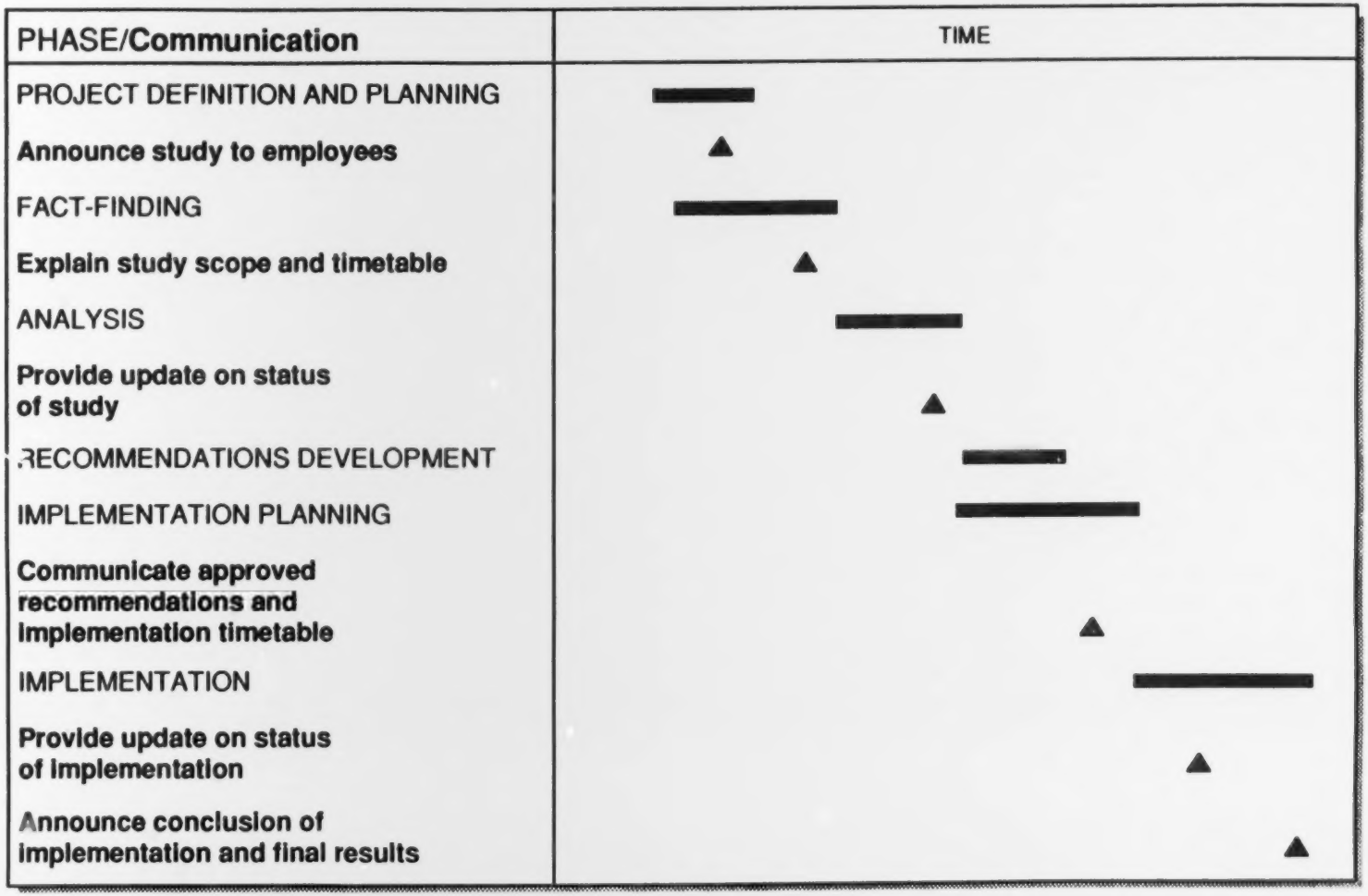


EXHIBIT III-25

cost is accompanied by staffing reductions. Acceptance will be influenced by understanding and involvement, which are achieved at least in part through communications.

In creating an effective communications strategy, a number of issues must be addressed. They include identifying the employees to whom the study should be announced, determining the level of detail with which to present the reasons for the study, identifying particular targets for improvements/reduction, and explaining the study process.

Execute Communication Steps

Although communication takes place throughout the study, it should include at least six elements:

- Study announcement, to be made soon after the study is approved, to explain why the effort is necessary and the university's commitment to keeping employees informed

- Study plan, to be presented to employees when the planning phase is completed, to explain the study scope and timetable

- Study update(s), to take place at intermediate points, for the purpose of discussing study activities, receiving employee comments, and commenting on employee concerns by responding to procedural questions about the study

- Study recommendations and implementation schedule, to be communicated when decisions have been made, to indicate in broad terms the actions to be taken and the timeframe for them, along with the principles and policies governing implementation

- Implementation update(s), to take place at intermediate points after the study is completed, for the purpose of presenting results to date and modifications in the implementation plan

- Implementation conclusion, to be presented in order to convey information on the success of the study and the way the changes are to be effected.

IV - ANALYTICAL TOOLS AND THEIR APPLICATION

IV - ANALYTICAL TOOLS AND THEIR APPLICATION

The core of the cost management methodology is its systematic and detailed analysis, which is made possible through use of a number of analytical tools and techniques specifically developed for cost management. Some of them were noted briefly in the discussion of the cost assessment process (Chapter III). These tools and techniques are used in various phases of the cost management process.

This chapter describes a number of tools and techniques in detail, and explains the purpose for which each one is used and the way it is applied to the process of cost management.

These techniques and tools have been applied to many organizations. As the case studies presented in the text and Appendix B make clear, some of the tools have been applied to studies conducted for universities. All of them are applicable to cost analysis in higher education.

Not all tools are applicable to every situation. They are used selectively, and their use is dictated by a number of variables, including the study phase, the specific objective, and the particular organizational element being examined. (The tools and their application are summarized in Exhibit III-3, Chapter III). Application of some of the methods requires relatively little in the way of time. Others require extensive data collection, computer support, and considerable outlays of time and funds. Some are relatively simple to use; others require greater experience and expertise on the part of the study team if they are to be effective.

BASIC TECHNIQUES

Techniques considered basic are those consisting of relatively simple methods for collecting and organizing information. They are used in most studies regardless of topic and scope.

Basic Fact-gathering Techniques

The three basic techniques for gathering information are document collection, interviews, and surveys.

A variety of sources, both internal and external, can be used in document collection. Some of them are listed in Exhibit III-7 (Chapter III).

Interviews are conducted to obtain facts (quantitative information) or perceptions (qualitative information) about the external environment of the university, the university's mission and strategy, its work requirements, the various components of organization (structure, roles and responsibilities, processes, culture, and distribution of resources), or the degree to which the university is achieving intended results or satisfactorily delivering services. Topics that address the elements of the organizational planning model probe areas relevant to the individual who is interviewed. These topics typically include the university's work requirements as well as its organizational structure, process, culture, and resources.

Interviews may be conducted in person or by telephone, and can be administered to individuals or groups, either within or outside the university.

An interview guide is often used to organize specific topics and questions for interviews and to ensure consistency and comprehensiveness of approach throughout the study team. (A sample interview guide is presented in Exhibit IV-1.)

PRELIMINARY TOPICAL INTERVIEW GUIDE

Introduction

Purpose of the study
Confidentiality

Organizational Structure

Roles and responsibilities of each unit
Interactions with other units
Budget reports

Work Requirements/Drivers

Work flows (steps, timing)
Workload indicators
Timing (peaks/valleys)
Operational reports
Service level goals
Service level measurement
Relevant policies

Staffing Rationale

Approach to meeting work requirements
Skill requirements
Workforce scheduling
Personnel policies

Participation In Institutional Processes

Cabinet-level decisions
Executive decisions
Institutional planning
Budgeting
Academic planning
Admissions
Student registration
Other student services
Library services
Other academic support
Personnel processes
Facilities planning
Purchasing
Computer support
Other administrative services

Perspectives On Other Units

Line units
Service units

Interview notes, once compiled, can be distributed to team members so that each member can use the information obtained by others in developing a more comprehensive view of the university and how it operates.

Surveys can be conducted in person, by telephone, or by mail. Among the most frequently used types of surveys and their application are the following:

- Position survey - a survey conducted by administering a questionnaire to incumbents of positions in the university to obtain information on the responsibilities, reporting relationships, and amount of time spent on particular tasks; the findings of the survey, which is administered early in the study, complement other information obtained through interviews and other means. (A sample position questionnaire is presented in Exhibit IV-2.)

- Service users' survey - a survey of users' perceptions of the levels and quality of services provided and needed; its aim is to assess the value of services to users; it is the type of survey used most frequently to probe departments and services of particular interest to the study.

POSITION QUESTIONNAIRE
(CONFIDENTIAL)

PART I - TO BE COMPLETED BY THE EMPLOYEE	
Employee Name:	Position Title:
Department and Division:	Name and Title of Supervisor:
GENERAL RESPONSIBILITIES: Please indicate the general responsibilities and broad objectives of the work you perform.	

DESCRIPTION OF DUTIES: List the duties that you perform and indicate the approximate percentage of time devoted to each of them annually.	Approximate Percent Of Time (Should Total 100%)
Use additional sheets, if necessary. Please write your name on each of these pages and staple them to this questionnaire.	

RELATIONSHIPS: Indicate the type of people inside or outside of the university that you contact regularly as part of your responsibilities. Exclude both your supervisor and any employees you may supervise.

Regular Contacts	Subject Matter	Frequency

SUPERVISORY RESPONSIBILITY: List the position titles you supervise and the number of employees

Position Title	Number of Employees	Position Title	Number of Employees

IMPROVEMENTS SUGGESTED: Comment on changes in your current duties which you believe would improve your effectiveness or efficiency in carrying out your general responsibilities.

COMMENTS: List any additional information you feel could be helpful in understanding your position. If you use additional sheets, please write your name on each of the pages and staple them to this questionnaire.

Signature: _____ Date: _____

- Values survey - to identify cultural values shared within the university.

Survey findings may be qualitative or quantitative, depending on the type of instrument used and the results intended. A survey with open-ended questions can be administered to a sample small enough that the responses can be analyzed in much the same way as are interview results. The results of this type of survey are qualitative. Alternatively, the findings from quantitative surveys are drawn from a larger sample of respondents, and are coded and analyzed for statistical significance, usually with computer support.

Basic Techniques For Charting/Presenting Information

Four basic techniques are used to array data and chart information for team review and analysis: organization charts, process flow diagrams, conclusion statements, and recommendation statements.

Organization charts, which show either positions or functions in their organizational relationship, are used as a way of displaying current or proposed organizational structure and of identifying structural deficiencies. (The criteria for determining these deficiencies are explained in Chapter III and presented in Exhibit III-14.)

Process flow diagrams display the steps (and in certain cases the responsibilities and timing) of a given process. They are used to display current or proposed processes and to identify gaps, overlaps, unnecessary steps, and other deficiencies in current processes. Examples of processes are budgeting, purchasing, and planning.

Conclusion and recommendation statements are working papers, prepared by the study team and begun at the outset of the project, that present and continually refine provisional conclusions and recommendations. Each statement has a format that requires specific information of the study team member. Conclusions statements include amplification, evidence, cause, implications, and comment. Recommendations statements include clarification, rationale, requirements, benefits, risks, and relationship to other recommendations.

These statements direct the inquiry to focus on areas in which important conclusions and recommendations may emerge. They are also used to obtain information that may support or refute other provisional statements. The information statement is shared with other members of the study team in order to better contribute to the development of final conclusions and recommendations in each area investigated.

SELECTED ANALYTICAL TOOLS

Activity analysis is a tool developed to obtain information about the work an organization performs. Such information is generally difficult to obtain for a number of reasons: managers may not be in close touch with day-to-day activities, many people who perform similar tasks may have different positions and salaries, and activities that are time-intensive but low in value may be difficult to detect. In activity analysis, employees are asked to complete a detailed questionnaire on which they specify the tasks they perform and the amount of time they spend on each. Analysis of the findings permits identification of major and peripheral tasks and their value to the organization. This information can be used in turn to determine whether the time and cost of the activities are warranted in terms of the university's strategy.

Joint Team Forms Review

The objectives of this review process are to obtain from unit managers information on current operations as well as suggestions for organizational improvement and cost reduction.

Middle managers selected as part of the project team use a series of specially designed forms to obtain the information. The process can expedite information collection, provide a means for obtaining "grassroots" ideas for reducing costs, and give middle managers a greater sense of involvement and sharing in the cost analysis process.

The forms, developed by the project team, request several kinds of information: organization charts and staff count, mission statements, data for activity analysis, workload measurement, and suggestions for expense management. Other forms request information from these managers on specific changes they would recommend ("change proposals") and recommendations for specific cost reductions they would make ("recommendation statements"). Change proposals and recommendations statements request information on current activities and their costs, along with the change suggested and estimated savings, other benefits, and risks.

Once completed, the forms supplement information obtained from interviews and other fact-finding activities. The change proposals and recommendation statements serve as the basis for conducting further analysis.

Service Users' Survey

The service users' survey is a technique for evaluating the effectiveness with which an organization delivers services. It does so by assessing the perceptions of staff, clients, or customers who receive the services. Perceptions can include views on the importance of the service to those for whom it is provided, and on the quality of the service. The survey findings can subsequently be used to focus fact-finding and analysis on the most promising opportunities for improvement in the type, amount, and quality of service delivered.

To prepare and conduct this type of survey, the study team develops a list of services that includes a description of each service and identifies the users and providers. The survey design enables the respondent to indicate, for each service/activity, its relative importance, its quality, and whether the amount is adequate. The survey data are entered on a computer to facilitate analysis.

Analysis produces the average service ratings by user and providers of service as well as the variation in these ratings. The ratings distinguish each service by importance, quality, and quantity. These findings can subsequently be linked with information on strategic objectives and work requirements to assess the value of services and to compare their value with their cost.

Decision/Responsibility Matrix Analysis

Decision/responsibility matrix analysis is a technique for describing how current decisions are made and how authority for decision-making is assigned and delegated in a university. It is also used for developing recommended decision-making roles and responsibilities.

Using information obtained from interviews, position surveys, and various documents, the matrix arrays the participants in the decision-making process against the elements of the process to characterize each participant's authority. Participants can be arrayed by title, function, or organizational level. Typically, they are categorized in one of six types of authority: approve, advise, formulate, implement, monitor, and receive.

The matrix produced from this analysis is a powerful tool that can be used to highlight overlapping or conflicting authorities and misplaced or missing responsibilities, particularly for complex decision-making processes. This tool is used in conjunction with mission/role analysis to determine whether a particular decision-making process reflects organizational goals and objectives. It also serves as a basis for evaluating organizational arrangements and key management processes.

Mission And Role Analysis

The purpose of mission and role analysis is comparison of work actually performed with the objectives of the university. Through a combination of information requests, surveys, and interviews, mission and role statements for specific staff functions are obtained. These statements are analyzed to identify redundant, overlapping, fragmented, or missing activities.

This analysis may serve as a basis for changes in the grouping of activities or in the roles of specific organizational units.

Spans And Levels Analysis

Spans and levels analysis assesses the breadth and depth of control and supervision. University organization charts are used as the basis for examining the number of positions and functions reporting to each position, and the number of levels of supervision in each functional area. This initial review is then supplemented by interviews, position surveys, and information from various documents.

The findings serve as the basis for analysis of workload and activities in areas where there appear to be too many (or few) levels of supervision or too many (or few) positions reporting to a position.

Process Analysis

The objective of process analysis is to improve efficiency by focusing on the processes by which work is accomplished. Process flow diagrams are used to determine whether it is possible to reduce the time and cost of completing a process, either by eliminating unnecessary activities; combining or aligning activities; and identifying improved methods, procedures, or automated support.

The analysis focuses on specific work steps, their relationship and sequence, the individuals or units that perform them and their inter-relationships, and the time and resources required for each step. The analysis is accomplished through the following tasks:

- Document and analyze process steps, work flows, workloads, work skills required, staffing levels, and costs.

- Identify unnecessary steps and disruptions in the process.

- Assess current and planned staffing for the process steps.

- Identify other units performing similar processes and explore consolidation potential.

- Investigate alternative technologies and equipment.

Flow charts used to diagram the processes ("process flow diagrams") illustrate each step and the responsibilities for completing it.

This tool is particularly useful for identifying opportunities to improve services and reduce costs in administrative functions, because such functions typically have an extensive paper and information flow. Examples of processes to which this analysis can apply are preparing an annual budget; processing capital programs and projects; maintaining student and personnel records; and managing such large service offices as admissions, alumni affairs, and public information.

Process analysis is used in conjunction with analysis of the workload of individual positions. By adjusting position responsibilities with respect to key processes, opportunities for consolidating positions on the basis of workload may be created.

Productivity Measurement

This is a method of directly assessing the productivity of a function, unit, activity, or individual. It is accomplished by developing productivity ratios, gathering information with which to identify the productivity level, establishing targets for improved productivity, and generating reports that describe productivity for continued monitoring.

Productivity ratios are selected units of output divided by selected units of input. Some examples are:

- Invoices processed per person-hour
- Audit projects conducted per internal auditor
- Cost per telephone call answered
- Bequest dollars per solicitation.

By matching productivity ratios with actual work volume, the current workload of individual positions can be determined and the appropriateness of staffing levels can be evaluated.

This tool can be used in conjunction with cost analysis to determine the cost of a given activity. It can be used for

comparisons with other universities or units within the university or with respect to generally accepted productivity standards to identify inefficiencies for further investigation. In the implementation of the study, productivity measurement can be applied to drive productivity improvement.

Workload Balancing

This is a method for determining the staffing levels necessary to meet a fluctuating work volume. The analysis includes examining work requirements in discrete periods of time and determining the number of staff required and how they should be scheduled.

This type of analysis is particularly applicable in a university, where the volume of work varies throughout the academic year. By scheduling work that is not time-sensitive at nonpeak periods and combining it in discrete positions with time-sensitive work, it is possible to improve the workload consistency of these positions. The result is improvement in the efficiency with which work is performed, lower costs, or freed capacity for additional service.

Cost/Benefit Analysis

This analytical technique, central to the overall cost analysis, examines an activity or service in depth to determine whether the costs are justified by the benefits obtained. When the costs are not justified, it is necessary to decide whether the service or activity should be eliminated or reduced.

The approach begins by utilizing relevant information obtained through other analyses:

- Mission and role analysis - may identify activities in which a high cost/benefit ratio suggests further investigation.

- Activity analysis - provides information on the cost of the activities.

- Service users' survey - reveals the importance of the activity to its users.

- Interviews - probe for qualitative information on the benefits of the activity.

The relationship of cost/benefit analysis to these other analytical tools is depicted in Exhibit C-3 (Appendix C). Cost/benefit analysis answers a series of questions:

- How important is the activity and to whom?
- Why is it important?
- How much does it cost?
- Does the value of the activity in achieving university objectives compare favorably with the resources spent?

The answers to these questions are assessed and set in a cost-benefit framework that arrays the relative importance of the activities, the adequacy of performance, the cost, and the probable action required to achieve a favorable cost/benefit ratio.

Make/Buy Analysis

This tool is used to identify the most efficient means of delivering services as a means of reducing costs. It is applied in determining whether to provide services in-house or to purchase them from a vendor.

The approach consists of a systematic investigation of the relative costs and benefits of selected functions or services. The first step involves identifying the services to examine. The examination consists of an assessment of the quality and cost of services and the alternatives available. In the second step, service specifications are established to ensure a reasonable basis of cost comparison. A set of criteria are then developed for judging the quality and cost of various alternatives. In the final step, a comparative analysis is conducted by applying the criteria to the service alternatives.

This method of analysis has significant application in universities, where a number of support services can either be supplied by the university or obtained under contract with an outside provider. Security, food services, custodial services, and maintenance are examples.

Alternatives Analysis

Alternatives analysis assesses alternative recommendations for change against criteria that measure their usefulness to the university. Typically, the results of various previously conducted analyses are drawn together for a determination of the recommendations judged to be most important.

For a given area in which change must be made, a number of viable alternative recommendations are developed. For each proposed change, a description is given of the way it would work and the way it would affect other facets of the organization. Criteria are developed for judging the merits of each alternative. These criteria typically include cost savings and service improvements, but might also encompass such areas of organizational effectiveness as improved decision-making, responsiveness to student needs, and provision for clear alignment of authority and responsibility. Each alternative is evaluated against each criterion and the results form the basis for selecting the best alternative.

Presentation of alternatives in chart form serves as a useful means of facilitating study team and client choice among alternatives. Application of this tool to the evaluation of degrees of centralization/decentralization and other organizational arrangements is presented in chart form in Exhibit B-1 (Appendix B).

APPLICATION OF THE TOOLS

A cost analysis study calls for a series of investigations and analyses whose aim is understanding the major elements of the organizational model and their interrelationships. These elements include:

- Strategy (including the external environment, the university's mission, and service expectations)

- Work requirements

- Organization (including structure, processes, culture, and resources)

- Results.

The techniques and tools discussed in this chapter are designed to facilitate this understanding and to use it as the basis for identifying improvements in organization and operation that will in turn lead to enhanced effectiveness and efficiency.

This section discusses the elements of the organizational model and use of the various tools to understand and analyze it.

Understanding Strategy

The mission and strategy of a university takes various forms of expression:

- Formal, written statements of mission and strategy
- Programs and services reflecting strategy
- Allocation of resources
- Activities of staff
- Perceptions of individuals both inside and outside the institution.

The substance of these expressions can provide useful information about whether or not the university is accomplishing its mission.

Analytical tools useful in understanding strategy include:

- Activity analysis - reveals how staff spend their time, the cost of that time, and perceptions of the importance of their activities
- Service users' survey - determines the importance, quality, and quantity of specific services/activities.

Work Requirements

This is the basic building block of cost analysis. Analysis of work focuses on effectiveness or conformity to university strategy. It identifies the work required to accomplish the university's basic purposes. Analytical tools that can be used to determine work requirements include:

- Activity analysis - produces a list of activities and the amount of time spent on them. This becomes a link with strategy, since time spent on activities is a measure of they way resources are used and should correspond with strategic objectives.

- Mission and role analysis - compares work actually performed with university objectives to identify activities that are redundant, overlapping, fragmented, or missing.

Work is typically analyzed by focusing on specific functions. Those that are the most costly to perform warrant particular attention in the study. Work in specific functional areas is measured against strategy, service level expectations, and cost to determine the match between what work is actually performed and what is necessary to accomplish objectives. This match permits identification of opportunities for selectively reducing work levels. Service users' surveys furnish similar

information by means of analysis of users' perceptions of services. Cost/benefit analysis links the specific cost of work in a functional area with the benefits derived (where benefit is defined as meeting strategic and service expectations).

Analyzing Organization

The primary way cost savings are achieved without reducing services is by effecting organizational improvements. Thus, the components of organization are the primary focus of cost analysis.

1. Structure. Structural analysis uses organization charts, position surveys, interviews, and criteria that measure a structure's effectiveness (i.e., whether it promotes accomplishment of work). The analysis defines roles and responsibilities, authorities, and accountabilities. Among the tools that can be used to analyze structure are:

- Activity analysis - to determine work activities, their organization by position, their cost, and their value to the university

- Decision/responsibility matrix analysis - to describe the extent of authority exercised by various positions

- Mission and role analysis - to identify areas in which organizational adjustment will correct problems of redundant, overlapping, fragmented, or missing activities

- Spans and levels analysis - to assess the breadth and depth of control and supervision in the university.

2. Culture. Analysis of culture identifies the shared values of the university that support effectiveness and efficiency in performing work. Interviews provide the opportunity to probe value issues, as does a survey specifically designed for that purpose.

3. Processes. The analysis of process includes examination of the way specific tasks are performed by a number of people whose activities are separate but integrated. Specific tools include:

- Process analysis - addresses this component of organization through focusing on work steps, their relationship and sequence, the individuals and units performing the steps and their interrelationships, and the time and resources required for each step

- Service users' survey - furnishes information on the perceived importance as well as the quality and quantity of service each process provides

- Decision/responsibility matrix analysis - provides information on decision-making processes

- Productivity measurement - furnishes information about the efficiency of processes relative to the standards of other organizations or to industry standards.

4. Resources. The analysis of resources addresses the allocation of staff, staff time, and other resources. It is the basis for determining the cost of services and activities. Since universities are labor intensive, most costs can be assessed by examining the way work time is spent. Basic cost information can be obtained through examining activities and the amount of time (and therefore staff cost) spent on them. The activity analysis tool can provide the same information, although in a more detailed and precise manner. Other analytical tools match cost information with organization structure, process and culture, work requirements, and strategy.

Relating Results

In cost analysis studies of university support services, results are expressed primarily in terms of objectives and service levels. Activity analysis, service users' analysis, cost/benefit analysis, and make/buy analysis link these measures of results with the strategy, work requirements, and organization components of the model.

APPENDIX A

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APPENDIX B

CASE STUDIES

APPENDIX B

CASE STUDIES

This appendix contains summaries of studies that illustrate the application of the cost reduction techniques explained in the text. Not all techniques were applied in each study.

Institutions of higher education differ markedly from business in mission and culture. Yet the organizational model is applicable to both. The case studies should prove useful to university administrators in scrutinizing their institution's need for rigorous cost management analysis. Each one is presented in considerable detail: background and study objectives, overall approach taken by the study team, and major conclusions and recommendations. The level of detail is intended to illustrate the context within which the techniques were applied.

CASE #1: "MIDWEST STATE"

Background

Like many other universities, "Midwest State" faces an uncertain demographic and economic future, the result of three converging factors. First, the university is located in a region of the country that is losing population overall, in addition to experiencing the decline in the high school-age population that is occurring nationwide. Second, the increasing cost of higher education is a particular hardship for the population base from which Midwest State is attempting to recruit: the region's lower-income and minority students. Third, the uncertainty of revenues received from the state in recent years has also contributed to instability in the school's income.

For several years, Midwest State undertook major initiatives to analyze its operations, with the aim of reducing costs and increasing revenues. For example, senior management officials of the university had developed strategic plans to focus on specific improvements. Among the cost reduction activities were redefining priorities as part of the annual planning and budget process. Units were also asked to reduce their budgets across the board.

In an additional effort to contain costs, the university determined to take a long-range approach, by analyzing costs in a more systematic, detailed manner through review of all areas not directly involved in instruction and research.

Objective

The objective of the review was to identify opportunities to reduce costs in all nonacademic areas. A reduction of $9 million in the annual operating budget was set as the target figure. The cost analysis objective included restructuring university operations to improve delivery of programs and services where possible.

Study Approach

The study was conducted by a team of analysts, with involvement of the president's cabinet at a number of key points in the study. (The top-level structure of Midwest State consisted of the president and seven vice presidents, who together were responsible for managing all major units of the university. These senior administrators formed the cabinet that advised the president.) The cabinet reviewed the initial development of the study plan, the reconnaissance findings, the interim results, and the draft final results. It was also

involved in implementation. A university decision not to involve its own personnel in the study team was prompted by the wish to ensure objectivity and avoid overburdening the staff.

The study was conducted in two stages: a reconnaissance phase and a detailed study phase. In the first phase, the study team examined each unit of the university from a top-management perspective. This phase included interviews with cabinet members and unit managers; review of planning documents, budgets, and organization charts; as well as administration of a position survey to senior managers and unit managers and review of the results. The information obtained was analyzed to identify opportunities for cost reduction or operational improvement in each unit. Criteria were established for identifying units with the greatest potential for cost reduction, and units that best fit the criteria were selected. These units were the targets for more in-depth study in the next phase.

The second phase involved extensive interviews and further review of documents. All employees in units selected for review were asked to complete position survey questionnaires. The study team made on-site observations of work in certain areas such as maintenance and custodial services.

A number of techniques were used in analyzing the information. The choice of techniques depended on the particular units studied and the issues addressed. For example, in personnel and student services, cost/benefit analysis was used to focus on priority services. In the detailed review of budgeting and facilities planning, process analysis was employed. In a number of areas (such as technical services and continuing education), several units were consolidated when analysis of the mission and role of particular functions and positions revealed that consolidation would mean greater efficiency in service delivery.

The need for top-level reorganization emerged from the analysis of a number of individual units. Problems in such areas as planning and facilities planning were also identified in several units. The analysis of top organizational structure complemented detailed analysis at the unit level. Research, for example, was a major university objective, but it received insufficient attention from several units and was identified as a separate function in the top organization structure. The combination of unit-level and top organization analysis led to the conclusion that research should be made a separate function in the top organization structure.

Conclusions

A wide range of conclusions emerged, including lack of a number of central support functions to assist the university in attaining its new objectives. These functions included planning, research, and affirmative action. The study team also concluded that the president's span of control was too broad and that more attention was needed for coordination among functions. Several additional conclusions, some of them related to the top organization, were reached for individual operating units. For example, in many units too much time and effort were spent in overall planning, facilities planning, and in conducting business through meetings. In addition, the effectiveness of management and supervision in certain functional areas was found to be overly dependent on the top management structure.

Recommendations

Among the major recommendations were the following:

- Create a new office of strategic planning, which would report directly to the president and which would focus and strengthen university planning and resource allocation.

- Upgrade the office of affirmative action, under the president, to give it the policymaking and advocacy focus needed to coordinate and direct services among various units.

- Establish the position of vice president for research, to strengthen and consolidate university research.

- Integrate finance and administration into a single unit, to ensure more effective service and to realize substantial cost savings.

- Eliminate certain planning and facilities planning activities in selected units, and have them assumed by the office of strategic planning and by finance and administration.

Results

Among the more important results of the study was a restructuring of the top-level organization. Overall, more than 170 recommendations, which would result in annual savings of almost $11 million, were made.

CASE #2: "URBAN STATE"

Background

Like most universities, "Urban State" divides responsibility for performing a number of essential administrative functions between a central university office and the colleges. Anticipating a sizable decrease in operating funds, university leaders sought a change in the centralization/decentralization balance in allocating responsibility for key functions. They wished to reduce costs without jeopardizing delivery of services.

Objectives

The university engaged outside counsel to investigate the division of responsibility. The goal was to identify opportunities that would enable Urban State to reassign responsibilities for key administrative functions.

Study Approach

Through interviews and review of position questionnaires, the study team identified ten functions for which responsibility was shared to varying degrees between central university units and the colleges. These functions were affirmative

action, facilities planning, budget planning and processing, admissions, registration, academic advising, grants and contracts application and processing, development, fund-raising, and public affairs and promotion.

In their initial projections, the study team found that where these services could be provided satisfactorily on a universitywide basis, the costs would be lower than they would be if provided on either a college-by-college basis or both by the colleges and at the university level. The next step was to assess the organization and staffing of these functions. Four questions served as a guide:

- What services were performed centrally that need not be supplemented at the college level?

- What services could be performed more efficiently by universitywide offices, particularly through automation, to reduce the burden on the colleges?

- Were there particular factors - such as college size, selectivity, research orientation, location, or special needs - that justified college responsibility for these functions?

- Which positions could be eliminated as a result of readjusting the allocation of functions between the university and the colleges?

In determining how to adjust the allocation of functions between the university and the college, a combination of techniques was used. Mission/role analysis revealed the way specific positions either met or failed to meet university objectives. Process analysis clarified the responsibilities of individual positions in accomplishing the work of specific functions. Through alternatives analysis a framework was created for evaluating the relative benefits of various alternative distributions of functions.

Conclusions

Testing the hypotheses for the nine shared functions revealed a number of opportunities for improvement. In several cases (for example, affirmative action, facilities planning, and budget), an undue amount of administrative time at the college level was spent on these functions. The cause - inefficiencies at the university level - required that administrators at the college level assume additional work. Anticipated improvements in central offices or increased automation could resolve these problems without the need to reassign responsibilities.

In other areas, certain functions were duplicative and inefficient. Two such functions were processing transfer admissions and academic advising, both of which were handled by each college rather than centrally. Administrators at the college level (usually assistant deans or counselors) advised students on a variety of concerns, from rudimentary issues such as changes in their class schedules to more complex issues such as requirements for their majors. This was a costly way to provide services.

Finally, certain functions had the potential to become self-supporting, and thereby to relieve the university's operating budget. These functions included grants and contracts, development, and college-specific publications and public affairs activities other than those supported centrally.

Recommendations

Study recommendations consisted of three main categories of functions: those for which the current mix of university and college responsibility would be maintained, those for which the university should assume responsibility, and those that should be self-supporting.

Among the recommendatins was to maintain the current mix of university and college responsibility for affirmative action, facilities planning, and budgets. For affirmative action, the rationale was that responsibility should be with personnel decision-making, which was decentralized to an extent in accordance with university guidelines. For facilities planning, it was felt that recommended improvements in the universitywide office would reduce the colleges' workload. In the budget function, the belief was that anticipated automation would increase efficiency at the college level, but staff would still be needed at this level to ensure some autonomy in budget planning and control.

Centralizing functions made sense where there were duplicate or overlapping responsibilities, such as in academic advising, maintaining student records, and processing transfer admissions. Automation of transcripts increased the central staff's ability to access student records and advise students on even such basic issues as changes in class schedule.

Despite the evidence favoring increased centralization, the analysis also indicated that special conditions in some colleges called for retention of separate advising capabilities. These colleges included some that served a large number of freshmen who had not declared a major or who had been admitted conditionally, as well as colleges located on remote campuses.

Among the other recommendations were that Urban State secure alternative revenue sources to support three functions - grants and contracts, development, and public affairs - and thereby save general operating funds. Colleges could choose to maintain their own staff for these functions. They would be expected to do so without the assistance of general operating funds, however.

The conclusions and recommendations for the functions described above, along with the accompanying rationale, are presented in Exhibit B-1.

Results

The study presented recommendations that would streamline important university services and that collectively would enable the university to eliminate 40 administrative and support positions at the college level. The total savings amounted to $1.3 million.

CASE #3: "NEW ENGLAND UNIVERSITY"

Background

"New England University" is a flagship state university system with a main campus and five regional campuses.

URBAN STATE UNIVERSITY

Analysis Of Key University Functions

Function	Current Status	Conclusion	Recommendation	Rationale
Budget	Shared: colleges develop, university combines and modifies	Colleges and university staff perform different functions	No change	Works effectively as is; anticipated automation will improve efficiency
Transfer Admissions	Decentralized	Fragmented; considerable overlap of activities at college level	Centralize with other undergraduate admissions function	Make more efficient with no loss of service
Academic Advising	Decentralized	Duplication of effort in maintaining student records; inconsistent standards; routine function performed by specialized staff	Centralize routine advising; maintain college support for specialized advising only	Avoids duplicate record-keeping, mismatch of staff and functions; improves efficiency
Grants And Contracts	Shared	Colleges have capacity to support own capability	Require colleges to obtain support from grant funds	Restrict general funds to seed money and universitywide priorities
Affirmative Action	Shared: colleges document hiring efforts and recruit; central administration monitors and enforces policies	Appropriate division of responsibilities; colleges need to process on an individual basis	No change	Strengthening central office will improve function at policy, advocacy level

EXHIBIT 3-1
Page 1 of 2

Function	Current Status	Conclusion	Recommendation	Rationale
Facilities Planning	Shared: colleges process requests for maintenance, renovation projects; central administration performs work	Appropriate division of responsibilities; if there is a burden on colleges, it is caused by central office deficiencies	No change	Improving central unit will ease burden on colleges
Registration	Centralized registration, with colleges maintaining duplicate student records	Duplication of record-keeping	Centralize record-keeping functions	Increased automation will improve student access to system
Development	Shared: central administration maintains own unit and assigns development offices to each college	Potential to make self-supporting	Require colleges to obtain support from generated funds	Restrict general funds to university-wide priorities and efforts on behalf of colleges
Public Affairs And Promotion	Centralized, with some colleges maintaining own staff	Potential to make self-supporting	Require colleges to fund	Central unit provides adequate services for the university; colleges that need additional support should fund own service

Historically, the regional campuses have played a traditional feeder role, accepting in-state students who did not qualify academically for the main campus or who chose to live at home. By earning two years of college credit these students are guaranteed admission to the main campus. More recently, the regional campuses have begun increasingly to assume additional responsibilities, ones designed to serve the needs of their respective communities. They are offering noncredit and evening courses and (in the case of one regional campus) a master's degree in business administration. The new president of New England University has undertaken efforts to redefine the university's mission, and has set as the goal to become a nationally recognized research institution.

Because New England University has been functioning under considerable financial constraints, it is continually seeking ways to accomplish its objectives with limited resources.

Objective

The purpose of the study was to determine the most effective and efficient distribution of functions between the university and its regional campuses.

Study Approach

The study focused on the key functions that define the operating relationship between the university and its regional campuses. These functions included academic programming and personnel management, planning, budgeting, student activities, library services, admissions, and regional campus administration. One regional campus was selected for in-depth review. There were six major tasks:

- Defining the current functional relationship between the university and its regional campuses

- Determining the way the functional relationship operated in practice

- Identifying issues and problems in current operations

- Relating current operations to university and regional campus mission and strategic objectives

- Specifying the extent to which current operations were facilitating or hindering the mission of the university and regional campuses

- Identifying improvements in functional relationships that would facilitate achievement of university and regional campus objectives.

By reviewing documents, conducting interviews at the university and the regional campus, and administering position survey questionnaires, basic information was obtained on responsibilities for decisions within the key functional areas. This information covered the importance and adequacy of services provided by the university to the regional campuses, both from a provider and a user perspective. Several analyses were conducted on the basis of this information. A series of decision-responsibility matrices were constructed to determine the pattern of universitywide and campus decisions in each functional area. These decision patterns were then evaluated in terms of their link with the missions of the university and regional campus. Alternative configurations of decision-making were constructed, and were subsequently evaluated against criteria developed by the study team.

A description of the key functions and the university and regional campus responsibilities of decision-making for each are presented in Exhibit B-2.

NEW ENGLAND UNIVERSITY

Current Decision/Responsibility Matrix
University vs. Regional Campus

Area Of Decision-Making	Description	University	Regional Campus
Academic Programming	Course offerings and new programs	Academic department approves university programs	Offers courses from approved program offerings Determines number of course sections Develops program proposals for university review
Academic Personnel Management	Appointment, promotion, evaluation of academic staff	Academic departments appoint, promote, and evaluate staff	Hires adjunct staff within available budgeted funds
Planning	Objectives, program plans for regional campuses	Plans require university funding and department approval	Initiates plans and identifies priorities
Budget	Development and approval of annual budget for regional campuses	Consolidates and approves unit budgets. In practice, regional items are approved by the respective departments	Formulates regional campus budgets

Area Of Decision-Making	Description	University	Regional Campus
Student Activities	Student advising and counseling, student programs and activities	Hires and evaluates student activities adviser and determines staffing levels	Provides direct services to students Regional campus director may have input into decisions on staffing configuration and hiring, and evaluation of staff
Library Services	Budget, staffing, operations, and collection development for regional libraries	Develops budget, allocates budget funds to regional campuses; hires and evaluates regional library staff; and approves procurement requests for monographs and periodicals	Operates library under university director; regional campus director may have input into personnel decisions
Admissions	Recruitment, admissions, transfers, financial aid for regional campuses	Directly administers all activities in this area	Provides supporting information
Regional Campus Administration	Registration and bursar activities; facilities maintenance; clerical support	University establishes policies and guidelines; approves budget	Manages these areas; hires and evaluates staff

Conclusions

The study revealed a conflict in mission between the university, which had been focusing on building its reputation as a research and graduate institution, and the regional campuses, which were becoming increasingly committed to serving the interests of their respective communities. The conflict was expressed in faculty hiring and promotion decisions and in the allocation of resources.

Efforts to build New England University into a first-class research institution gave college deans an incentive to hire and promote full-time faculty members committed to conducting research and developing promising graduate students. By contrast, the primary objective of the regional campuses was to serve undergraduates and the community, which meant an emphasis on teaching and on courses that were more basic and practical. Faculty at the regional campuses, who as members of the university faculty were evaluated on the same basis as those located at the main campus, were penalized by the lack of research support and library facilities and by their heavier teaching loads. If regional faculty attempted to spend more time on research, the regional directors had to recruit additional part-time faculty to replace them in the classroom, a situation that in turn required funds from the budget used to recruit research faculty for the main campus. This practice also

increased the workload of the student affairs staff at the regional campuses, since fewer faculty members were available to advise students.

The cumulative impact of the current operation was a decision-making structure that supported the central mission of the university system, but that thwarted the ability of the regional campuses to fulfill their community-based missions.

Recommendations

The study produced a recommendation for a change in the decision-making structure so that it would support the regional mission without conflicting with the university's central mission. Accomplishing this change involved granting a greater degree of autonomy to the regional campuses, with additional authority in specific areas, including program offerings, faculty selection and evaluation, and budget. (Exhibit B-3 presents the proposed responsibilities for each decision area.) The regional directors would become deans for their campuses. Each would head a "university college" department, defined to include all permanent faculty at the regional campus. If the size or nature of a particular program warranted, a separate dean, who would report to the campus dean, might be appointed to head it.

NEW ENGLAND UNIVERSITY

Proposed Decision/Responsibility Matrix
University vs. Regional Campus

Area Of Decision-Making	Description	University	Regional Campus
Academic Programming	Course offerings and new programs	Provost approves regional campus programs Departments have advising input	Regional campus determines programs
Academic Personnel Management	Appointment, promotion, evaluation of academic staff	A new university college headed by the Provost would be responsible for setting policies for appointment, promotion, and evaluation of permanent academic staff	Regional director becomes Dean of university college for that campus; responsible for academic leadership Appoints, promotes, and evaluates permanent and adjunct academic staff
Planning	Objectives, program plans for regional campuses	Plans require university funding and Provost approval (departmental approval no longer required)	Initiates plans and identifies priorities
Budget	Development and approval of annual budget for regional campuses	Approves regional budgets (departmental approval no longer required)	Formulates regional campus budget

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Area Of Decision-Making	Description	University	Regional Campus
Student Activities	Student advising and counseling, student programs and activities	Establishes overall guidelines for student affairs	Provides direct services to students Hires and evaluates staff and determines staffing levels
Library Services	Budget, staffing operations, and collection development for regional libraries	Approves library budgets as part of overall regional campus budget Provides guidance to regional libraries	Operates library, develops budget, hires and evaluates regional library staff, approves procurement requests for monographs and periodicals
Admissions	Recruitment, admissions, transfers, financial aid for regional campuses	Directly administers all activities for feeder programs; serves as resource for region-specific programs	Directly administers all region-specific programs
Regional Campus Administration	Registration and bursar activities; facilities maintenance; clerical support	University establishes policies and guidelines; approves budget	Manages these areas; hires and evaluates staff

The recommendations involved such significant changes that a special mechanism for their review and detailed implementation was suggested by the consultants.

The implications of these changes for efficient university operations are far-reaching. Regional responsibility for utilization and cost of faculty will significantly affect overall operating costs. The latitude given to the campuses to match course offerings to market demand will increase revenue. The opportunity to develop plans that are based on need and that can be executed without severe constraints on main campus budget decision-making will facilitate improvements in cost and revenue at the regional campus level.

Results

The study recommendations are under review. If implemented, they will result in more effective and efficient operation of the regional campuses.

CASE #4: "CITY UNIVERSITY"

Background

"City University" is a prominent private university located in a large urban area. The academic culture, reinforced by the

environment, places great value on autonomy - for students and faculty as well as in departmental governance. During the 1970s, decentralization of the academic units was further reinforced when a budget shortfall prompted disbanding the central admissions office and delegating this function to the colleges, as a cost-saving measure. By 1987, however, a special presidential commission on the future of the university recommended that the diverse parts of the institution become more aligned in supporting the institution as a whole.

Objectives

The university sought opportunities to reduce the operating costs of student services. Against the traditional backdrop of college autonomy, administrators in the office of student services were interested in either supplementing or supplanting certain functions performed at the college level. They wanted an independent evaluation of ongoing efforts to provide greater efficiency and consistency in service delivery.

Study Approach

A variety of background materials, including the organization chart and budget of the office of student services, as well as university planning documents, were reviewed. Administrative heads of the student service units were interviewed, and

position survey questionnaires were administered to all student services staff. The information obtained from the document reviews and interviews permitted identification of the functions performed by both the office of student services and colleges. Four key functions were fund to be shared: student orientation, student financial aid, student employment, and career services.

Three colleges were selected for in-depth study. The administrators responsible for providing student services at these colleges were interviewed. A number of students were interviewed to obtain their perspectives on the quality of services provided.

Finally, a list of criteria were developed for identifying the functions that were the most likely candidates for being performed centrally by the office of student services with the support of the colleges. The most promising strategy appeared to be one based on collaboration between the university and the colleges and on university and college selfinterest. The rationale was the value placed on college autonomy and the absence of an explicit requirement for centralization. Thus, the criteria identified specific advantages for both the colleges and the university.

Advantages Of The Alternatives For Each College

- Save costs: should be less expensive than providing the function on a college-by-college basis

- Maintain needed expertise: should relieve each college of the necessity of maintaining the level of expertise required to perform the function

- Address priorities: should enable each college to divert scarce resources to more compelling objectives

- Fill a vacuum: should provide a service not currently available at the college level.

Advantages Of The Alternatives For City University

- Fulfill mission: should reinforce the president's efforts to instill a universitywide focus on the campus

- Save costs: should result in economy of scale and an overall reduction in university expenses

- Provide legal protection: should reduce the university's legal vulnerability by providing consistent policies and practices

- Increase efficiency: should eliminate duplication in service delivery

- Enhance coordination and consumer use: should make services more user-friendly and more available

- Promote equity: should make delivery more equitable in colleges that had not been providing a given service.

Conclusions

The study conclusions confirmed the strategy that had been adopted by office of student services administrators: to supplement services currently provided by the colleges or to furnish additional services currently unavailable.

The office was making these kinds of efforts in three areas. First, it was providing new sources of information, through a student handbook it had prepared, and by offering information on alcohol and drug abuse prevention. Second, the office was furnishing expertise to the colleges on changes in the regulations affecting student financial aid. This assistance included administering financial aid for four of the smaller colleges, which had pooled their resources to maintain the needed expertise (something they could not do individually). Third, the office was facilitating cooperative

ventures with the colleges. An orientation program, originally designed for foreign students, was extended to all students. Student services staff initiated the effort and coordinated the expanded program, with staff assigned from each college.

Recommendations

On the basis of the university's initial success with its own services strategy, the study team recommended that the office of student services pursue an incremental strategy of expanding its programs in two areas: student financial assistance and career services. To the extent that the office could maintain central capacity for administering financial aid, with monetary contributions from the colleges, the colleges need not maintain total capacity on their own. Centralizing capacity for financial aid was important because it was an area requiring a relatively high level of expertise. Such a strategy would also ensure more consistent delivery of information. To the extent that the career services unit could be expanded to serve all colleges, duplication would be reduced. Prospective employers could be contacted centrally and would no longer have to schedule student recruitment interviews at multiple campus locations.

Results

The criteria generated recommendations to extend student services to the colleges in two areas: administration of student financial aid and employer recruitment. (The criteria and the alternatives for financial aid administration are illustrated in Exhibit B-4.)

CASE #5: "A MAJOR UNIVERSITY"

Background

"AMU" is a major state university with FTE enrollment of over 30,000 and an operating budget of $65 million. In an effort to reverse its deteriorating financial condition, the university took a number of steps to restore its financial stability. One of these steps was to conduct a study of all units of the university in which teaching or research were not the primary activities. Among the areas designated for study were the libraries, perhaps the most controversial area, because the librarians are tenure track faculty. The nature of the administrative processes and services in the libraries made it appropriate to include them in the overall review.

CITY UNIVERSITY

Evaluation Of Alternatives For
Administering Student Financial Aid

College Perspective

Criteria For Each College	Alternative I Maintain Current Responsibilities	Alternative II Centralize Function
Save Costs	Maintaining separate staffs for each does not permit cost savings	Consolidation would enable colleges to pool resources, thereby saving money
Maintain Expertise	Maintaining expertise is limited by budget constraints at the college level	Pooling staff centrally would allow hiring of more specialized staff
Address Priorities	Need to support this function competes with funding, staffing of other college priorities	Would enable colleges to use funds for other services, programs
Fill A Vacuum	Not applicable: colleges are currently providing function; therefore, a vacuum does not exit	Not applicable: function would continue to exist under a centralized system

Recommendation from college perspective: centralize function

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CITY UNIVERSITY

Evaluation Of Alternatives For
Administering Student Financial Aid

University Perspective

Criteria For Each College	Alternative I Maintain Current Responsibilities	Alternative II Centralize Function
Fulfill Mission	University cannot comprehensively serve all colleges in providing key function	Would enable university to serve all colleges comprehensively
Save Costs	Maintaining separate staffs for each college does not permit cost savings	Would save funds by reducing duplication, making better use of centralized staff
Provide Legal Protection	Current system places university in jeopardy if college policies, levels of expertise are inconsistent	Would provide legal protection by making policies consistent, providing needed staff specialization and expertise
Increase Efficiency	Efficiencies cannot be realized by maintaining separate college staffs, unless organized by functional area	Would make function more efficient by eliminating overlap and duplication
Enhance Coordination Of Services/ Consumer Case	Coordination of services occurs within colleges, not throughout the university; students benefit by being served at their college	Would coordinate the function campuswide; students may be burdened slightly by service from a central office
Maintain Equity	Equity cannot be ensured if each college provides services	Single office would ensure equity

Recommendation from university perspective: centralize function

The library system at AMU consists of a university library system, and law and medical libraries (studied separately). The university library system comprises a main library and 13 college libraries, three at remote locations.

The library system has three major components:

- Administration, responsible for overall management of the library units and college libraries, as well as administrative functions

- Access Services, responsible for ordering, receiving, and processing monographs and periodicals; and for cataloging and circulation

- Collection And Information Services, responsible for collection development and management of the individual college libraries (including their collection development and circulation functions).

The university library budget was $5.4 million annually and the staff numbered 200.

Study Objectives

The purpose of the study was to identify opportunities to reduce costs in the university library system without reducing the level of essential services.

Study Approach

The study focused on the processes by which the work of the libraries was accomplished and the degree of satisfaction with the services. Initial discussions with the librarian and associate librarians were held to obtain an overview of library operations and issues. Review of organization charts and budgets (particularly personnel costs) was supplemented by administration of a position survey questionnaire to each member of the library staff. More extensive interviewing provided an understanding of key processes, the role of individual staff members in them, and an internal assessment of the importance and quality of library services. This assessment was complemented by user assessments conducted during studies of the other units, particularly the university and college administration and planning functions.

Each process was reviewed by the consultants to determine opportunities for improvement and the implications for staffing levels and skill mix.

Conclusions

The analysis of library operations revealed problems in supervision and workload. There were too many supervisory layers, and as a result there was more supervisory activity than necessary. Fragmentation of units produced duplicate supervision of similar work. In some instances the position workloads did not match the number of positions assigned. Nor did workload reflect improvements in automation. Workload imbalance meant underutilization of some employees and excessive workload for others.

Recommendations

Recommendations were made for modifying the overall structure of the library system, consolidating top management positions, and clustering functions into four units (monographs, serials, circulation, and collections). Several units that resulted from the initial reorganization were clustered into sub-units within each of the four units. Excess layers of supervision were eliminated, and staffing was adjusted on the basis of workload, use of automation, and nonpeak scheduling.

These recommendation were made on the basis of detailed analysis of work in each unit. Examples are as follows:

- In monograph acquisitions, where approval orders had increased relative to firm orders, adjusting the workload permitted reduction in supervision and greater focus on workload management.

- Automating the on-line catalog system permitted reduction in staff as a result of decreased workload.

- Merging monograph acquisitions and catalog units allowed reduction in supervision.

- The three layers of supervision in circulation were reduced by one.

- Reserves was staffed for nonpeak workload, with other staff deployed for peak periods.

- A longer-term plan for consolidating college and departmental libraries and collections resulted in substantial improvement in efficiency of circulation functions.

Results

Analysis of the AMU university library system led to identification of $1.1 million in potential savings.